

YOURS FOR SLEEP

WILLIAM S. WALSH, M.D.

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YOURS FOR SLEEP

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BY
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WILLIAM S. WALSH, M.D.
" "

"Sleep, thou most gentle of the deities."—OVID



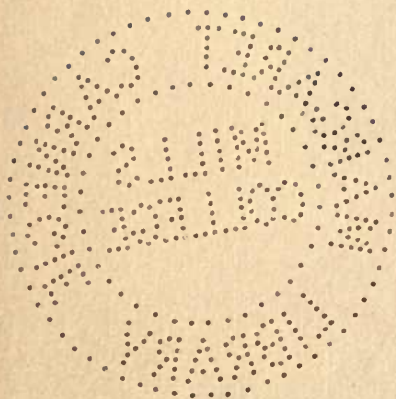
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TO
J. W. K.
THIS VOLUME
IS AFFECTIONATELY DEDICATED
BY THE AUTHOR

PHYSICAL EDUCATION DEPARTMENT

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PREFACE

THE object of this little volume is not only to help the sleepless sleep, but also to instruct them on a few of the principles of right living, a disregard of which is most often the sole cause of their disorder. For this purpose the more common causes of insomnia are considered at some length.

Many authors have been consulted, not only medical but lay also; for, as Oliver Wendell Holmes remarks: "Medicine, sometimes impertinently, sometimes ignorantly, often carelessly called 'allopathy,' appropriates everything from every source that can be of the slightest use to anyone that is ailing in any way, or like to be ailing from any cause. It learned from a monk how to use antimony, from a Jesuit how to cure agues, from a friar how to cut for stone, from a soldier how to treat gout, from a sailor how to keep off scurvy, from a postmaster how to sound the Eustachian tube, from a dairymaid how to prevent smallpox, and from an old market woman how to catch the itch insect. It

borrowed acupuncture from the Japanese, and was taught the use of lobelia by the American savage. It stands ready to accept anything from any theorist, from any empiric who can make out a good case for his discovery or his remedy."

If this volume serves but a few of those who may read it the author will feel that his labors have been amply rewarded. W. S. W.

"Beside the cloudy confines of the western night and the distant Ethiopians, there is a misty grove, impenetrable to the brightest star, and under the hollow rocks an immense cave descends into the bowels of the mountain, where sluggish nature has placed the halls of lazy sleep and the drowsy god. Motionless Rest and dark Oblivion stand on guard, and torpid Sloth with never wakeful eye. At the porch sits Ease and speechless Silence with close contracted wings, driving the murmuring winds from the roof, forbidding the foliage to rustle or the birds to twitter; here no roaring of the ocean, though all the shores resound, no crashing of the thunder; the stream itself, gliding along the deep valleys close to the grotto, rolls silently between the rocks and cliffs; the sable herds and flocks recline at ease on the ground; the newly sprung grass withers, and the vapors make the herbage languid. Glowing Vulcan has formed a thousand statues of the god within; close by is wreathed Pleasure; here, in attendance, is Toil inclined to rest; here the same couch receives Love and Wine; deep, deep within he lies with his twin-brother, Death, a sad image to none. Beneath the dew-bespangled cavern the god himself, released from cares, crowned with drowsy flowers, lay on tapestry; his dress sends forth exhalations, his couch is warm with his lazy body, and above the bed a dark vapour rises from his half-shut mouth. The one hand sustains his hair hanging over his left temple, the other has dropped the horn unheeded."

—STATIUS: *Thebais*, X, 84.

"It covers a man all over, thoughts and all, like a cloak; it is meat for the hungry, drink for the thirsty, heat for the cold, and cold for the hot. It is the current coin that purchases all the pleasures of the world cheap, and the balance that sets the king and the shepherd, the fool and the wise man, even."

—CERVANTES: *Don Quixote*.

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YOURS FOR SLEEP

CHAPTER I

THE PHYSIOLOGY OF SLEEP.

"What probing deep
Has ever solved the mystery of sleep?"
—T. B. ALDRICH.

"HALF our days we pass in the shadow of the earth, and the brother of death extracteth a third part of our lives." So said Sir Thomas Browne. But why an individual must sleep away one-third of his existence no one has yet satisfactorily explained.

If abruptly asked the question, "Why do we sleep?" no doubt the first answer that would present itself to us would be, "Because the body needs rest." While it is true that the body needs, and must have, rest, what part of it does rest during sleep? Is it not true that, asleep or awake, the heart pumps its stream, that the lungs expire and inspire, that the stomach, liver, pancreas, and other organs perform their functions? Moreover, is it not true that during sleep the skin excretes practically twice as much as during the waking state; that even the nails and hair continue to grow? Is not hearing still acute, as

proved by the fact that any sound capable of attracting our attention during the waking period will disturb the sleeper? If the eyes were open would we not see? Will not unsavory odors, or badly tasting material placed in the mouth, awaken the slumberer? Do we not all dream, which goes to show that the mind is not at entire rest? Do we not frequently change position, are we not conscious of pain, do not persons sleep on horseback, etc.?

What part of the body, then, does rest during sleep? But before we consider this question, let us first consider some of the phenomena which take place during normal sleep.

When we retire for the night we assume an easy attitude, with the muscles all relaxed. We close the eyes to shield them from sensory influences. During sleep respiration becomes slower and less deep, the breathing being distinctly thoracic in character. Inspiration is prolonged and the normal respiratory pause is absent. Mosso states that the amount of air inspired during sleep is one-seventh of that used during a period of quiet wakefulness. Carbonic acid elimination is decreased, while the absorption of oxygen is increased. The heart beats more slowly, yet forcibly; the pulse is less rapid, and the general arterial pressure is lowered. The brain is

anemic, while the blood supply to the skin is greatly increased, which accounts for the increased production of sweat. The internal temperature of the body is lessened. The movements of the stomach and intestines are enfeebled. All the secretions of the body are diminished, save those of the skin.

Thus, while practically all parts of the body still function during sleep, we see that they are working more slowly than is their wont. Sleep is therefore, to use the words of Dr. Church, "a recurring necessary state of lessened muscular, mental, and organic activity, attended by comparative unconsciousness of surroundings. No physical or mental function is entirely abeyant." Or, in the words of Marie de Manacéïne, "sleep is the resting time of consciousness." Thus, "to sleep is to strain and purify our emotions, to deposit the mud of life, to calm the fever of the soul, to return into the bosom of maternal nature, thence to re-issue, healed, and strong. Sleep is a sort of innocence and purification. Blessed be he who gave it to the poor sons of man as the sure and faithful companion of life, our daily healer and consoler." (Amiel.)

Why is sleep necessary? Because sleep enables the body to recuperate from the wear and

tear incident to body activity, for during the waking period waste exceeds repair. We sleep because we must, else, die. Animals deprived of food for twenty days, and which have then lost more than half their weight, may still be saved by judicious feeding; but complete deprivation of sleep will cause their deaths in from four to five days—this in spite of the most careful feeding and other care. Loss of sleep is therefore worse than starvation.

Just as we are still ignorant of many of the phenomena which occur during sleep, so are we also ignorant of the cause of sleep. Though experiments galore have been made by many scientists in an attempt to answer the question, we must still content ourselves with theories; few of which have sound scientific bases on which to rest, and none of which has as yet received universal acceptance.

All sorts of theories have been offered. Some have been so deficient in soundness as to receive no consideration. An example of these is the thyroid gland theory, in which it was claimed that a stasis of blood, which came from the brain, in this gland, caused sleep. That this is not true is easily proved. In total absence of the thyroid, hereditary or acquired, there is not an inability to sleep, as we would expect if this theory were

true. On the other hand, such individuals complain of drowsiness and sleep most readily.

The chemical theory had for a long time wide recognition. It was based on the claim that the accumulation in the system of the waste products incident to the body's activity served as toxins and sleep followed as a sort of narcosis. We know that sarcolactic acid is formed as a result of muscle work. If a series of electrical stimuli be sent into a muscle so rapidly that the muscle is not permitted to rest, the muscle will soon fail to contract, no matter how strong the stimuli may be. This is mainly due to the accumulation in the muscle of sarcolactic acid, but if this substance be removed by washing the muscle in normal salt solution the muscle will again react. Sarcolactic acid was looked on as the toxic material which produced sleep. Since waste results from work, if this theory of the accumulation of acid waste products were correct, we would expect to find the lazy man sleepless and the hard worker never an insomniac; whereas, from experience we find the reverse is more often true.

The biologic theory, formulated by Claparedé, supposes that sleep is a defensive factor of the body, that it occurs whether we will it or no, and that its purpose is to ward off fatigue. Sleep,

according to this theory, was not always necessary, nor was it one of the phenomena of life. We are to suppose that man adapted himself to it to suit his environment. The best that can be said for Claparedé's doctrine is that it is a theory, and while it will appeal to evolutionists, it cannot be proved.

If faulty, the best theory as to the causation of sleep is that which states that sleep is due to a cerebral anemia. We know that whatever increases the blood supply to the brain inhibits sleep, while such measures as draw blood away from the brain—as a hot bath, a meal—favor sleep. Moreover, in cases where a portion of the skull bone had been removed, either from necessity or for experimental purposes, data very much in accord with this theory were obtained. For instance, it was noted that when drowsiness came on the natural pinkish color of the brain became paler and paler. The brain also became reduced in size in consequence of the diminished supply of blood to the organ. When sleep came on the brain was quite pale. If the sleeper were awakened, it was observed that the brain surface quickly assumed its waking color, that its volume increased likewise, and that minute blood vessels, unseen during sleep, stood out prominently. If the subject again returned to

sleep this state of affairs was reversed. Just how this anemia of the brain is produced—that is, what substance or substances influence the nerves controlling the caliber of the cerebral blood vessels so as to render that organ anemic—we do not know. But inasmuch as the theory has a physiological basis it seems worthy of acceptance, pending positive contributions to our knowledge on the subject of sleep.

Many other theories, such as the neuron theory which supposed that the connecting links between the nerve endings were severed by means of some chemical substance, this separation of the nerves producing sleep, were at one time or other advanced. All have had their heyday of credulity and incredulity. It will, I think, be of more profit to us to consider some questions which can be answered more dogmatically, such as, How much sleep is necessary?

Kant, I believe, derided the necessity of sleep and strove to do with as little of it as he could. We have many examples of characters, famous in the world's history, who have done good work on a minimum of sleep. But while it is well to emulate good example, the example of all men, no matter how prominent they may be, is not to be followed without question. "One man's meat is another man's poison." Because Thomas

Edison can work brilliantly on a few hours' sleep, we are not to imagine that we can do likewise, for our nervous organizations and physical stamina may not be able to stand the strain.

It may be interesting to consider the time allotted to sleep by some oft-quoted men. Thus, Jeremy Taylor devoted to sleep but three hours out of every twenty-four; Dr. Reid, the metaphysician, could work unceasingly for two days if he got one sound sleep after a full meal; Baxter allowed four hours; Frederick the Great and John Hunter required only five hours' sleep; Wesley took six hours' sleep; Sir William Jones, seven; Sir John Sinclair, Dr. Elliotson, Bismarck and Gladstone, eight; Zola, seven. The First Napoleon and M. Thiers slept little, but could command sleep at any time, whether fatigued or not. Lord Brougham, Goethe, Humboldt, Mirabeau, Charles XII, the Duke of Wellington, Vergil, Horace, Franklin, Priestly, Parkhurst, Buffon, Sir Thomas More, and many others, could work on less sleep than the vast majority of us need. Temperamental differences, habit, circumstances, etc., explain why so little sleep sufficed these men.

Tyrus Cobb, the most famous living baseball player, figures on getting plenty of sleep. He says: "My idea of the best way for anyone,

whether athlete or business man, to keep in good trim is to be careful not to eat too much or sleep too much. I always figure on getting nine hours of sleep."

Sam Crawford, ex-team mate, and an athlete of no mean renown, says: "The old saying, 'Early to bed and early to rise,' sounds good to me. I am generally in bed at ten o'clock and up at seven. That gives me nine hours of sleep, and that seems to be about the right amount for storing up energy for use the next day."

John Burroughs, the naturalist, who at seventy-seven said he was in better health and more able to work than he was at forty-seven, goes to bed at nine in the winter and is up at six; in the summer he gets up with the sun.

Amelia Barr, when in her eighty-third year, went to bed between eight and nine in the evening and remained there ten hours, even though she slept but seven.

Cardinal Gibbons, whose rules of health are regularity of life; moderation in eating and drinking; exercise; avoidance of worry; and an ever-abiding trust in God's providence, finds from experience, in his own case, that eight and a half hours' sleep at night, with a half-hour's siesta in the afternoon, are necessary. He advises the young to seek enough sleep, since regularity

in that respect insures a long life. Like Barr, even if he does not sleep the whole time he is in bed, he is satisfied with the rest he procures. He prescribes a good day's work for a long and refreshing repose.

As a general rule, children require more sleep than adults. While there is little destruction of tissue, growth is rapid, and between growth and repair there is not much essential difference. For the first few days of its existence, the newly born infant sleeps profoundly and almost continuously. During the first few weeks, a healthy infant sleeps from twenty to twenty-two hours out of the twenty-four. During the first six months, the infant will usually sleep from sixteen to eighteen hours a day. At one year, an infant will sleep eleven or twelve hours at night, and two or three hours during the day; at two years, eleven or twelve hours at night and one or two hours during the day. At four years, twelve hours' sleep is necessary. From six to ten, ten hours' sleep is required, and from ten to sixteen, at least nine hours'.

As a rule, adults require from seven to eight hours' sleep out of every twenty-four. Women can do with less sleep than men. In old age the requirement is less. In cold climates more sleep is required than in warm or temperate climates.

All good rules have their exceptions. The amount of sleep that our own individual make-ups require should be studied. Too much sleep is almost as detrimental as too little sleep. The former tends to weaken the vital processes, to favor the accumulation of waste material, to disturb the proper correlation between anabolism and catabolism, and to promote a general lethargy of mind and body. Too little sleep, on the other hand, puts the body in a state of tension, and is quickly detrimental if long continued.

There is an adage to the effect that "early to bed and early to rise, makes a man healthy, wealthy, and wise"; which leads us to consider the proper hour for rising and retiring.

The darkness, stillness, and cessation of business render night the most favorable and the most convenient time for repose. There are, however, many living things—such as the owl, the moth, the bat—which work at night and sleep in the day. Many persons find it difficult, often impossible, to sleep in the daytime, but this is mainly due to the effects of light and noise, which arrest the attention and so thwart cerebral quiet. But if the light and noise be such as would not arrest the attention during the waking period, sleep is possible to these. Moreover, one can

become accustomed to the effects of light and noise such as are wont to disturb sleep, providing the individual is not by nature a light sleeper, or is not neurotic.

Attempts have been made to prove that day sleep is not as beneficial as night sleep, and that night workers suffer thereby. This is not true, however. If the night worker works no more than he ordinarily would in the daytime, if he does not use stimulants to keep himself awake, and if he procures his requisite amount of sleep with daily regularity, no harm is evident. Night policemen, engineers, and conductors on night trains, etc., are, as a rule, well physiqued and healthy.

Fielding, the author and poet, is responsible for the proverb, "One hour of sleep before midnight is worth two after." Considering the fact that most of us have to arise at a certain hour, so as to be at our daily work in time, it necessarily follows that if we do not retire until after midnight we are not apt to procure enough sleep. Moreover, it is not work which keeps men from their beds until the wee sma' hours of the morning, but more often dissipation. From a physiological point of view, Fielding is not supported. The first few hours of undisturbed sleep, no matter when obtained, are usu-

ally the deepest, the most valuable, and the most refreshing.

There is a popular idea that sleep before midnight tends to favor the development of beauty. If we are to believe Crabbe, whose *Parish Register* endeared him to all lovers of poetry, no sleep is beautifying.

He says:

"Beauties when disposed to sleep
Should from the eye of keen inspection keep:
The lovely nymph who would her swain surprise
May close her mouth, but not conceal her eyes:
Sleep from the fairest face some beauty takes,
And all the homely features homelier makes."

Crabbe was a good poet, but it must have been that his artistic eye was jaundiced when he made the above observations, else the paintings of "Sleeping Beauties," and legendary stories of such a nature, were founded on dreams and not reality. All sleep is beautiful and beauty-giving, save excessive and unnatural sleep. There is no reason why sleep before midnight should be more beauty-giving than sleep obtained at other times; nor is it.

It is wise to regulate the hour of retiring and of rising according to the season of the year. To awake early on a dark, cold, wintry morning does not fill anyone with too joyful thoughts; but

when the springtime is at hand, the chirping of the birds, the balminess of the air, the verdure of the foliage, and a certain indefinable sweetness invite us to jump out of bed, seek the open, and revel in its delights. The awakening of children in the early morning hours, when artificial light must be used, is bound to prove detrimental. There is no good in sending children off to bed immediately after the evening meal. When nature's cry for sleep is satisfied they awake, no matter how early it may be, and thus the rest of the remaining members of the family becomes disturbed. Determine the amount of sleep they require and put them to bed at an hour that will have them awake at, or after, the parents' awakening.

System is the life of trade and the life of life. Good habits are harder to form than bad ones, but once formed they become a pleasure instead of a hardship. In the winter, if we are naturally good sleepers, we should go to bed later than usual but earlier in summer, so as to avoid the dismal morning aspect of the one and enjoy the cheeriness of the other.

Those troubled with disturbed sleep should particularly bear in mind the importance of retiring at a definite hour regularly. Moreover, they should have a definite time for arising. The

taking of second naps in the morning is not beneficial. It is the lazy man's habit. When the appetite for sleep has been appeased a call is sent to consciousness to arouse. The belt is thrown on and you awake. Nature is ready to start the working day. Naps during the day-time are of no value to the insomniac. What the latter most desires is an ability to sleep at night, and day naps are not conducive to such.

On what side of the body should we sleep? Most people prefer the right side, but this is largely a matter of habit. Popular opinion favors the right side because it is claimed that by this cardiac action is not embarrassed and the emptying of the stomach is facilitated. Some observers think that the reason inflammation of the right lung is more frequent than that of the left is due to the fact that lying on the right side favors stasis of blood on that side. Pneumonia is very common on the right side. Inflammation of the bases of the lungs occurs more often than inflammation of the apices. We appreciate the fact that tuberculosis is not of frequent occurrence in persons suffering from heart disease, explained—in part, at least—because the venous stasis in the lungs is not favorable to the growth of the tubercle bacilli. It may be that the upright position during the day and the lying on

the right side at night protect the bases of the lungs from invasion by tuberculosis, but weaken the apices by lessening its blood supply. Tuberculosis practically always starts in the apices of the lungs.

Sleeping on the back is a fruitful source of dreams, probably due to interference with the cerebral circulation, secondary to a compression of the abdominal aorta by the viscera. Which side to sleep on is, after all, but a minor point. We must choose one side, and there is no weighty reason why one side is not as good as another.

A peculiar fact is that during sleep the sense of time is greater than when we are awake. Experiments conducted some years ago showed that fifty-nine per cent. of the subjects examined were able to awake in the morning at any time they had decided upon the night before. If any of us decided to call up a friend on the 'phone at a certain hour during the day, if no timepiece were at hand not one in a hundred would fulfill his promise at the designated time. Another curious fact is that the further removed from the brain a part of the body is the less soundly does it sleep. A touch on the toe will awaken one more readily than a touch on the head, a point which policemen seem to have grasped.

Sleep has been often likened to death. "Sleep,"

says Sir Thomas Browne, "is death's younger brother, and so like him, that I never dare trust him without my prayers." "Sleep," says Donne, "doth fulfill all offices of death save to kill." Many other references might be quoted, but the likeness, if any exists, is more poetry than truth.

"Our life is twofold; sleep has its own world,
A boundary between the things misnamed
Death and Existence; sleep has its own world."

—BYRON.

CHAPTER II

WAKEFUL DISORDERS OF SLEEP

"Dreams are but interludes, which fancy makes;
When monarch reason sleeps, this mimic wakes."

—DRYDEN.

THE wakeful disorders of sleep are insomnia, troubled dreams, including certain allied conditions, as pavor nocturnus, nightmare, and somnolentia, somnambulism and nocturnal enuresis. The latter cannot truly be classified as a wakeful disorder of sleep, but since it causes much concern to anxious mothers it may be well for us to consider it in this connection. Insomnia, because of its greater frequency, and, therefore, relatively greater importance, will be taken up in the following chapter.

Dreams—From time immemorial dreams have been regarded with a superstitious awe and mysterious majesty, not only by the ignorant but the erudite as well. Nor are the views propagated by such once mighty men as Panyasis Hali-carnassensis, Achmet, Artemidorus, and many other sages relegated to oblivion; though aged and devoid of much truth, we still have them,

though clothed in up-to-date garments. Posing as being possessed of supernatural powers, the fortune teller acquaints us with the information that our dreams, properly interpreted, as they alone are competent to do, will give us a knowledge of life and death, riches, health, and what not. The only power these present-day sooth-sayers are endowed with is a remarkable adaptability in separating the gullible from their money. While it is true that from the nature of a person's dreams a scientist may be able to deduce some idea concerning the individual's health, such facts as are learned are learned by natural methods. He who claims supernatural powers is a fool, a charlatan, a monomaniac, or one deluded.

Hippocrates, styled the father of medicine, and many of whose doctrines still remain true, and who lived from 460 B. C. to 357 B. C., has the following to say concerning dreams:

"He who forms a correct judgment of those signs which occur in sleep will find that they have a great efficacy in all respects; for the mind is awake when it ministers to the body, being distributed over many parts; it is not then master of itself, but imparts a certain portion of its influence to every part of the body, namely, to the senses, to the hearing, seeing, touch, walk-

ing, acting, and to the whole management of the body, and, therefore, its cogitations are not then in its own power. But when the body is at rest, the soul, being in a state of movement, steals over the organs of the body, manages its own abode, and itself performs all the actions of the body; for the body, being asleep, does not perceive, but the soul, being awake, beholds what is visible, hears what is audible, walks, touches, is grieved, reflects, and, in a word, whatsoever the offices of the soul or body are, all these the soul performs in sleep. Whoever, then, knows how to judge of these correctly will find it a great part of wisdom. But with regard to such dreams as are divine, and prognosticate something, either good or evil, to cities, or to particular people, there are persons who have the art of judging of them accurately, without falling into mistakes. But such affections of the body as the soul prognosticates, namely, such as are connected with repletion and evacuation, from the excess of customary things or the change of unusual things, on these also persons pronounce judgment. And sometimes they succeed and sometimes they err, and understand not how this happens, that is to say, how it comes that sometimes they are right, and sometimes they fall into mistakes; but warning people to be upon their guard lest

some mischief befall them, they do not instruct them how to guard themselves, but direct them to pray to the gods; and to offer up prayers is no doubt becoming and good, but while praying to the gods a man ought also to use his own exertions. With regard to these, then, the matter stands thus: Such dreams as represent, at night, a man's actions through the day, and exhibit them in the manner in which they occur, namely, as performed and justly deliberated, these are good to a man, and prognosticate health, inasmuch as the soul perseveres in its diurnal cogitations, and is not weighed down by any repletion, evacuation, or any other external accident. But when the dreams are the very opposite to the actions of the day, and when there is a conflict between them—when this happens, I say, it indicates a disorder in the body; when the contrast is great, the evil is great, and when the one is small, the other is small also."

Whatever we cannot understand and which cannot be explained we attribute to supernatural agencies. Every true Christian believes that he has a soul, but while much of the above is true, we will be pardoned, I think, for doubting the soul's influence in causing dreams.

Somewhat in accord with Hippocrates' belief is that of certain pseudo-psychologists who form-

ulated the doctrine that, during a dream, the soul leaves the body and on its return remembers all that it has met with in the spheres it visited. On this presumption Comenius and Swedenborg established religions, Swedenborg greatly influencing his followers by claiming that in a dream he visited paradise. In olden days, good folk were wont to believe that during the act of sneezing the soul left the body, and that if it did not quickly return its place would be taken by an evil spirit. To ward against such a catastrophe such charms as saying "God bless us" were used to drive away the creature of evil, which custom is still preserved among peasant folk. This latter belief is quite in accord with that of the pseudo-psychologists concerning dreams. It is a remnant of a superstitious age, and superstition will never die as long as ignorance abounds.

It will be hard to convince believers in the Bible to forswear allegiance to the idea that dreams are supernatural. In the Bible two varieties of dreams are referred to, namely, natural and supernatural dreams. "A dream cometh through the multitude of business" and "For God speaketh once, yea twice, yet man perceiveth it not. In a dream, in a vision of the night, when deep sleep falleth

upon men in slumbering upon a bed: then he openeth the ears of men and sealeth their instruction," respectively exemplify each variety. God works in wondrous ways. We have no means for ascertaining whether the various miraculous and prophetic dreams recorded in the Holy Writ were God-sent or just material images. However, it does seem plausible that many of the dreams there and elsewhere narrated became actualities either because of coincidence or that the dreams stimulated the dreamers to definite lines of action, which, for a reason we cannot always fathom, proved fruitful. The dreams of Judas Maccabæus, of Scylla, of Germanicus, to quote only a few, are examples of such. There are, however, innumerable cases on record of prophetic dreams which many of us may attempt to explain, but unsuccessfully.

Be these problems as they may, from a medical point of view dreams have much weight. It is probably true that entirely dreamless sleep does not occur, which assertion, unfortunately, cannot be proved. But it is a fact, nevertheless, that it is only the well who have happy, contented dreams; while the sick, mentally or physically, suffer from dreams of an exciting or depressing nature. So, even if dreams are symbolic of naught else, they are the ways and the

means of indexing an individual's state of health, if the dreams are properly studied.

In hysteria, neurasthenia, and in melancholia, particularly, dreams of a depressing or otherwise disturbing character are frequently present. An increased supply of blood to the brain, as is seen in inflammation of that organ, arterio-sclerosis, mental excitement, etc., stimulates the brain to extra endeavor and excitable dreams are apt to ensue. Impoverished blood, or the circulation in it of toxic substances, introduced from without or within, interferes with the nutrition of the brain cells, giving rise to dreams generally of a depressing character.

Certain physical states are prone to modify the nature of a dream. Thus sensations of pain, indigestion, an uncomfortable position in bed, are liable to produce dreams of monsters, falling over precipices, etc. Indigestion and impairment of the respiratory or cardiac action, make the dream partake of the nature of a nightmare. Pleasing sounds falling on the ear of a sleeper may stir up fancies of the opera, or the buzzing of a mosquito may suggest warfare. Opium and cocaine are reputed as giving their habitués very pleasant dreams, but the pitiable wretches who have been lured into the vice by the stories of De Quincey and others find that this is not al-

ways the case. Drugs used to promote sleep cause unpleasant, horrifying dreams in certain subjects. Alcohol produces delirious dreams, while Indian hemp and bisulphide of carbon give rise to dreams of murder.

Troubled dreaming, associated with disturbed sleep, indicates a low vitality. All dreams not pleasurable in nature and which are remembered, are detrimental in many ways. They interfere with sleep, or, if the sleep remains unbroken, the nutrition and repair going on at the time deviates from the normal. Again harassing dreams may be equivalent to a shock received during the waking state. It therefore behooves such sufferers to give the condition the attention which it deserves. The correction of bad habits of eating or sleeping may be all that is necessary, or the disorder may not respond so readily because of a mental problem requiring solution. In any case, a physician should be consulted.

Nightmare is a particularly vivid dream, in which the sufferer is oppressed by a sensation of suffocation, of falling, and of great weight in the chest. During the attack the individual may experience a variety of distressing feelings; thus, he may be falling down a mountainside, unable to use hands or legs in an attempt at saving himself; he may be pursued by an assassin, by a wild

animal, a spirit, or may be about to be horribly tortured, when he awakes with a loud cry and considerable fright. Nightmare is dependent upon some disturbance of the general health, or is the effect of some very vivid mental experience. Indigestion, overeating, bad ventilation, indulgences of any kind, mental shock, worry, etc., are predisposing factors. Lying on the back with the head low may induce an attack.

A cure depends upon removal of the cause. Since indigestion, though overrated, may be an etiological factor in its causation, overeating, especially of heavy or indigestible foods, particularly before retiring, is to be absolutely forbidden. Certain articles of food are prone to cause nightmare in certain persons; it goes without saying that if the palate be served in such cases it is at the expense of the individual, who deserves no pity.

With nightmare I have had some personal experience. The first attack I remember distinctly. Tired of reading, and, in truth, mentally and physically played out, I threw myself across my bed with the intention of procuring a little rest before dinner. I soon fell asleep, however, but was shortly awakened by some noise which I later took to be the footsteps of a fellow lodger along the hallway, and who was coming in the

direction of my room. I tried to rise, but all power of motion seemed to have left me, sensation likewise. Hearing, vision, and consciousness remained undisturbed. I tried to stimulate my will to control my muscles but again failed, and this time, more or less frightened, endeavored to call for aid, only to find that I could not move my mouth, let alone talk. Meanwhile, it seemed as if hours were passing instead of seconds. A sudden rap upon my door roused me to activity. On another occasion I went through the same unwelcome experience. I am inclined to think that overwork was responsible. The condition is often called *nocturnal paralysis*.

Pavor nocturnus, commonly known as "night terrors," is a condition only found in childhood, sleep being disturbed, one or more hours after going to sleep, by fright. There are two classes of cases.

The first class resembles nightmare and is quite common. The child awakes considerably frightened and excited, but the mind is clear, and parents and surrounding objects are readily and accurately recognized. The child will usually say that he has had a bad dream. The causes are those which produce disturbed sleep in childhood, chief among which are indigestion, adenoids, enlarged tonsils, poor ventilation of the

sleeping room, malnutrition, exciting stories before bedtime, etc. When the disturbance first puts in an appearance the child should be taken to a physician. The cause for the nocturnal attacks may be simple and easily remedied; while, on the other hand, it may be of a serious nature, and require the most careful and prolonged treatment of a specialist. In passing, it may be well to call parents' attention to the fact that children who cry out in the night but who are found sleeping when the parent reaches their side may be suffering from hip disease. Taken early in hand this disease is curable, but if long neglected is only cured after years of trying treatment and with the possibility of a permanent deformity.

In the second class of night terrors the child is usually found sitting upright in bed, in a very dazed condition, and terrified of a "dog," a "cat," a "bear," or other dream vision or hallucination. The objects seen are usually described as being of a red color. The child may run about the room, climb up on bureaus, escaping from the pursuing object of the dream. He cannot be quieted readily, but after a few minutes will return to bed and go to sleep as if nothing had happened. There is no waking recollection

of the occurrence, and usually no after effects are suffered. The attacks may occur once every few weeks or at intervals of several months.

This type is of a very serious nature, inasmuch as it indicates an unstable nervous system. It is of frequent occurrence in children of neurotics, and is one of the stigmata of degeneracy; it may be a forerunner of epilepsy, hysteria, or even insanity. No one but a physician is competent to treat this important malady, but in general the child should lead a quiet life, free from mental, nervous, or physical excitation. It is well that someone sleep near the child to prevent accident befalling it.

There are many other disorders of sleep associated with or bearing a relation to dreams. Thus the dream state may be cast into the waking state for a long or short period of time. The dream may end in convulsions. A person may, on being awakened from a deep sleep, be maniacal and do acts of violence, for which, of course, he is not responsible. The latter condition is known as *somnolentia*, or *sleep drunkenness*. These disturbances are indicative of neurotic instability.

In *somnambulism*, of which sleepwalking is the most prominent manifestation, the individual acts his part of a dream. The eyes may be open

or shut, and without seeing, the sufferer may perform most difficult and dangerous actions, but in such a cautious manner as to lead one to believe that all consciousness is not asleep. The individual adapts himself to circumstances, and such acts as are performed are only those which pertain to the dream story. The subjective powers are increased; extraordinary tactile sensibility may be combined with anesthesia.

In the somnambulistic attack persons have performed almost incredible acts, such as they would never think of in the waking existence. They have climbed mountains, walked along the roofs of houses, and have committed murder even. Again, they have gone about their customary daily work, and, strangely enough, the work done is often superior to that accomplished at other times. They usually have no recollection of the attack on the following day.

Somnambulism may be inherited and is a neurotic stigma. It generally first appears around puberty. The sexes are equally attacked. The sensitive and excitable are predisposed to it. Mental overwork, stories of sleepwalking, or even a study of the subject, may bring on an attack.

An attack may be stopped by a sudden jar, a dash of cold water in the face, clapping of the hands, pressure over the supraorbital foramina,

etc. It is not always advisable to do any of these things, inasmuch as in highly nervous subjects the shock produced is often seriously harmful. Much can be done either in curing the affection or in, at least, ameliorating the number of attacks. The general nervous system should first of all receive attention. A firm determination on the part of the afflicted not to walk in sleep may produce a cure. Children who suffer from the disorder should receive at bedtime a cold spinal douche and be told that the object of it is to stop them from walking in their sleep. Or some other simple procedure may be followed, but the child must be forcibly impressed that it is able to ward off somnambulistic attacks. To stimulate them toward recovery they should be promised rewards, but are never to be punished. In adults all methods of treatment sometimes prove fruitless. In such cases precautions are necessary lest accident befall the individual.

Talking in sleep is a minor form of somnambulism. *Double consciousness*, a condition in which, during the waking period of the individual's existence, he leads two distinctly separate lives, is somnambulism in its highest form. Those familiar with the story of Dr. Jekyll and Mr. Hyde will have no difficulty in understanding the meaning of the term. It is generally accepted

that one of the personalities is pathological. Hysterics occasionally develop a double personality, and a hypnotic double personality may also occur. In connection with some forms of psychical epilepsy the patient may act for days, weeks, or for only a few minutes in a manner entirely foreign from his normal self. Double consciousness represents a disturbed mental state.

Another disorder which is common in neurotic children, but which may also be found in hysterics, epileptics, neurasthenics, and neuropaths, is *nocturnal enuresis*, or *bed wetting*. In some cases it is a partial somnambulism. The act is not occasioned simply by a relaxation of the sphincter of the bladder, but the patient dreams he is passing water and, acting his part of the dream, propels the stream with much force. Just what occasion dreams of this nature cannot always be ascertained. Internal sensations or external causes, as light, friction, heat, may be responsible.

In general, incontinence of the urine in children is due to any deviation of the system from the normal. It may be caused by a too highly acid urine, to local irritation of the genitals, pinworms, inflammation of the rectum or of the urinary passages, anemia, malnutrition, spinal

diseases, etc. Heredity is sometimes very noticeable. In many cases no cause can be discovered.

A serious mistake which many mothers make is to punish the child because of the disorder. One little lad, because of frequent punishment, sought to escape more by tying a cord about the genital organ, with the result that gangrene set in. The child is not to blame because of the condition, and punishment serves only to aggravate it. Kindness is a valuable medicine, one which can be given and taken *ad libitum*, with only the best results.

There is much that can be done to alleviate, if not cure, the affection. The diet should consist of milk, vegetables, fruits, cereals, and a small amount of meat. Tea, coffee, beer, sweets, highly seasoned foods and fried foods are contraindicated. A promise of reward and the giving of some simple substance at night, as a mint tablet, with the declaration that it will cure the trouble, creates a psychical impression which often cures. The emptying of the bladder before going to bed and the elevation of the foot of the bed so as to prevent the urine from irritating the bladder neck are also efficacious. The spinal douche at bedtime, followed by a brisk rubdown, is highly beneficial, especially if the child be sufficiently impressed with its value. The best tonics for

the child are fresh air and good, substantial food. Life in the country is contributory to recovery. Water should be withheld for a few hours before bedtime. Drugs should only be administered by the physician.

Sleep ptosis, a condition in which there is a difficulty in opening the eyes on awakening, sometimes occurs in individuals whose nervous systems are below par. It is part of a general muscular weakness, and disappears with the removal of, or an improvement in, the underlying disorder.

Anemic persons, excessive users of tobacco or alcohol, sufferers from gout, diabetes, neurasthenia, etc., sometimes awake with a sensation of pricking or numbness in the limbs. Cramps, pain, and loss of power may be present in the affected members. It may occur any time the individual goes to sleep, night or day, and may last for years. The condition is known as *acroparasthesia*. An attack may be removed by heat, friction, or exercise, but a cure can only be effected when the cause is removed.

With the possible exceptions of *sleep ptosis* and *acroparasthesia* the various disturbances of sleep enumerated above are important, not only because they interfere with sleep, but because they are indicative of underlying disease. They

are signposts warning the sufferer of danger. The longer they remain untreated the more difficult they are to cure. It therefore behooves whosoever is afflicted with any of these ailments to procure the best medical attention he can. Delays are always dangerous, but profitable not only to the physician but the undertaker as well.

"Fly, dotard, fly!

With thy wise dreams and fables of the sky."

—HOMER.

CHAPTER III

INSOMNIA AND ITS CAUSES

"How many thousands of my poorest subjects
Are at this hour asleep! O sleep, O gentle sleep,
Nature's soft nurse, how have I frightened thee,
That thou no more wilt weigh mine eyelids down,
And steep my senses in forgetfulness?"

—HENRY IV.

INSOMNIA, briefly defined, is an inability to sleep the average length of time. It manifests itself in various ways. The individual may go to bed tired, and apparently well prepared to sleep, but in spite of all his efforts, or rather because of them, sleep does not come for one, two, or more hours, but once it does come the individual sleeps soundly until morning. During the time he remains awake, the sufferer may be tranquil in mind or, as is more often the case, peevish and fretful. He may be conscious of the fact that it is pain, worry, or other cause that keeps him awake but in other cases the individual is mentally quiet and cannot fathom the reason for his sleeplessness. This type of insomnia is frequent in those given to worry, nervousness, or who are over-fatigued.

On the other hand, the person may readily go to sleep, only to awake in the early morning hours. He may, after an hour or two, again go to sleep; but, as is usually the case, once awakened, no more sleep is granted. This type of insomnia may be due to distressing dreams which the sufferer remembers, either wholly or in part, to the effects of light or noise, to physical discomforts, to habits, etc. In so far as habit is concerned, if one awakes on one or two occasions at a certain time a tendency is formed to awake regularly at that hour. The majority of us, even though our sleep has never been disturbed, can by resolving to awake at a certain hour fulfill that resolve. However, unless we encourage the practice by getting up when we awake this power may be lost. A nervous individual, on the other hand, is inclined constantly to preserve it. He may have been awakened in the early morning hours, by reason of some discomfort, and experienced difficulty in again going to sleep. The matter is not treated lightly, but causes much concern. His last thought at night is that he will awake too early, and in a person of his temperament this autosuggestion does that very thing. If, on the other hand, he made up his mind that he was going to pass the night undisturbed the chances are that he would. Some individuals

have gotten into the habit of getting up at night to smoke; or during a temporary period of insomnia, have been able to put themselves to sleep by drinking a glass of milk, etc. Insomnia is thus maintained, and unless corrected may last a lifetime.

There are other individuals who, under a broad conception of the term insomnia, may be said to be insomniacs, who sleep fitfully, and remember having awaked several times during the night for short periods. Others are only conscious of the fact that their sleep has failed to bring them refreshment; they awake feeling practically as tired as when they went to bed.

Sleep is a natural process, opinions to the contrary notwithstanding. Normal sleep is a gift which we all have had at one time or other, and may still have. There are few insomniacs who can truthfully say that they have never enjoyed such sleep as visits the majority of their fellows. We make sleep a habit, but it differs from all other habits in that it can be easily broken. Nevertheless, there are some persons who can abuse this priceless possession continually, almost, and yet not suffer its loss. They are, as a rule, well fortified by physical and mental vigor, and devoid of neurotic stigmata. It would appear that insomnia is not only dependent upon the various

physical and other general causes that may produce it, but on an underlying nervous instability. In fact, most of the sufferers from insomnia are neurotic. Their insomnia may have begun at a certain time, and may be ascribed to a more or less definite cause; but if a careful study were made of the individuals it would be found, very often, that prior to the insomnia they suffered from, or gave evidences of, nervous inferiority.

In another place it has been stated that loss of sleep is worse than starvation; an animal experiment in proof of this has been quoted. It may also be added that experiments on men have shown that deprivation of sleep for about ninety hours was productive of hallucinations of sight, decreased strength, defective memory, etc. We might go further and state that it used to be, and may still be, a practice of the Chinese to punish criminals by keeping them constantly awake, and that as a result horrible tortures were experienced by such unfortunates; that Tous-saint L'Ouverture, commander-in-chief of the Haytians, reduced Napoleon First's army of 30,000 veterans to 5,000 effectives simply by feigning attacks when the army was asleep.

However, there is a vast difference between insomnia and absolute or almost absolute depriva-

tion of sleep, which latter the above cases illustrate. The pale, thin, fatigued-looking girl who frequents dance halls and exerts herself far into the night is generally able to sleep when her head strikes the pillow. Her anemia and weakness are due to many causes. Over-exercise causes an increased destruction of body tissue; the poor air of the dance hall deprives her of proper oxygenation of the blood; she returns home fatigued, procures a few hours' sleep but not enough for her body's needs, goes to work fatigued, becomes more fatigued as the day progresses, becomes stimulated with the night by a contemplation of her favorite diversion, and, instead of paying yesterday the sleep she owes it, contracts new debts. She has not given her body a chance to keep harmony; work has exceeded rest; destruction has exceeded repair. The vital processes become weakened. Becoming overheated, over-fatigued in the dance hall, she is unmindful of precaution; the change from the stuffy dance hall to the outside air, because of her weakened resistance, causes a cold, which cold may later develop into tuberculosis. She dies, and is held up as a horrible example of the effects of loss of sleep.

True, she is an example of such, but not of insomnia. If this girl had been an insomniac, and

had acted as she did, her obituary notice would have been written long before. She suffered, in so far as sleep is concerned, because she denied herself her requisite amount of sleep. But even if she were troubled with insomnia, if she set aside seven hours each day to be spent in bed continuously, no matter if not all of them were blessed by sleep, she would have maintained health. The few hours of sleep that she did procure, added to rest, would have sufficed her needs.

Insomnia does not kill, *per se*; neither does it undermine the health. Many individuals who by reason of influenza have been afflicted with intractable insomnia, or who are hereditarily poor sleepers, do not suffer because of it. They give the matter little or no concern. They have a schedule for the night; so many hours to be spent in bed regardless of whether sleep visits them or not. It is the worry over insomnia that kills. Add to this deprivation of rest. Fretful because sleep does not come; the sleepless one reasons that there's no use of going to bed; he works far into the night, walks the floor, or makes himself miserable by his gloomy thoughts. Consequently his health becomes undermined. But if he did go to bed and remained there for seven or eight hours, and kept his mind tranquil,

he'd not only always feel competent for mental and physical work, but also maintain health.

Insomnia, however, is not to be crowned with a laurel wreath; not one of us hails it as a friend, though we will as a conqueror. We are all too familiar with the balm of sleep to praise sleep's foe. Nevertheless, we should not form an erroneous idea of insomnia's supposed ill effects. It is because insomnia tends to occasion worry, and to prompt one to neglect rest, that harm is done the individual. The insomnia may precede the worry, in which case the first causes the second. Or the worry may precede and be the cause of the insomnia; in this case the insomnia gives birth to new worries. But free insomnia from worry and there will be less reason to ascribe to it so many dire consequences.

When one comes to consider the various factors capable of producing insomnia he has assumed quite a task, for there is no disturbance of the system, whether mental or physical, that is not capable of producing the disorder.

One fact that we should be mindful of is that insomnia is not a disease, *per se*, but simply a warning of some underlying trouble. Remove the underlying cause and the insomnia will take care of itself.

In infancy and childhood disturbed or rest-

less sleep is more common than true insomnia, though both conditions may exist and the causes of each may be the same. The commonest causes of such are hunger and indigestion, the result of bad habits, as exciting games before bedtime, frightening stories, rocking during sleep, irregular feeding. It may result from dentition, pain in any part of the body due to any cause, as the pain of inflammation of the middle ear or the pain from diaper pins. Fully one-half of the cases in later childhood are due to indigestion, the most frequent type being chronic intestinal indigestion. Adenoid growths in the pharynx, enlarged tonsils, worms, lack of sufficient fresh air in the sleeping room, insufficient bed clothing, coldness of the limbs, hip disease, anemia, malnutrition, overstudy, etc., may be provocative of disturbed sleep. To ascertain the direct cause a physician should be consulted. To doctor a growing child by a narcotized "Soothing Syrup" or any paregoric medicine is detrimental in more ways than one. Paregoric to a child is what morphine is to an adult.

After middle life the most common cause of insomnia is arterio-sclerosis. What is meant by arterio-sclerosis, its symptoms and treatment, we will consider in a later chapter.

The physical causes are indeed many. Passing discomforts, as mosquito bites, ticklings in the throat, may suffice to disturb the sleep or render the night sleepless in emotional, easily disturbed persons. Pain in any part of the body, as rheumatoid pains, the pain of appendicitis, kidney stone, etc., we can readily appreciate. Any of the acute diseases, as pneumonia, scarlet fever, meningitis, may, by the toxins these diseases generate, so disturb the equilibrium of the body as to produce the disorder; but once the disease has been removed the insomnia is also removed. Poisons in the system, whether due to diseases such as gout, diabetes, constipation, excessive bodily fatigue, or taken into the body in the form of tea, coffee, alcohol, tobacco, cocaine, morphine, etc., need be borne in mind. Certain so-called nerve tonics depending upon strychnine and other stimulating drugs, are often causative factors.

Disturbances of the circulation, as cold feet, which is in turn but a symptom of anemia, constipation, indigestion, or other disease, is probably the most common immediate cause of insomnia. Coldness of the feet is also common in brain workers and in such is not dependent generally upon underlying disease. The drinking of something hot, such as hot cocoa, beef extract,

milk, or even hot water, and the holding of the feet for a brief period under hot, then cold water, followed by friction, may produce the thing desired—sleep. A hot-water bottle to the feet may prove as efficacious. Burning sensations in the feet is a favorite cause of disturbed rest, usually dependent upon some more or less local derangement of the system, and consequently can only be intelligently treated after the cause has been ascertained.

Insomnia from indigestion is by far the most frequent. Probably fifty per cent. of all insomniacs are dyspeptics, knowingly or unknowingly. Since this is so, we will consider the subject at greater length in a later chapter.

Causes least suspected are apt to be causative of the most aggravating and seemingly incurable insomnia. Thus many a case of insomnia has resisted the treatment of renowned specialists simply because the fact that such organs as the eyes, the ears, the nose, the teeth, and the throat were possible etiologic factors was not taken into consideration. That errors of refraction and other eye disturbances may produce insomnia and the insomnia be the only symptom of ocular disorder is a non-disputed fact. Likewise ceruminia, or wax in the ear, as well as foreign bodies in the ear and other pathological conditions, may

prove at fault. Because we suffer no subjective sensations from the teeth, nose, or throat, it is no indication that these parts are normal. An abscess may exist at the roots of the teeth, which abscess can only be detected by an X-ray examination. Similarly spurs may be present on the septum of the nose, or hypertrophic rhinitis exist, which may not only account for insomnia but other maladies as well. Disorders of structure of the throat may prove at fault; the fact to be learned is that all these parts must be regarded as guilty until proved innocent.

Insomnia often results from bad habits of sleeping. The leading of an irregular life, with its attendant disturbances of the system and the going to bed at any hour of day or night, are not likely to conduce to natural sleep. When one acquires the habit of retiring at a certain hour each night he can so court sleep as to win her for his own, but the reverse is also true. There are, of course, some who can sleep at any portion of day or night, but if we should see someone, no matter how wise, place his hand in boiling water, we would not follow the example. We are not all of the same stamina or physical material. We each have a separate existence to live, entirely different from that of others, so it behooves us to learn the requirements

of our own make-ups, and to live so as to harmonize with them.

That much insomnia results from psychic influences solely cannot be doubted; it is a proved fact. The carrying to bed with us of business problems, or familial perplexities or misunderstandings, the reliving of events that stir the brain to undue activity, do not favor sleep. By the time we decide to go to sleep we may find it impossible to do so, and should we then start to worry about the chances of sleep having deserted us, we have placed our best foot forward on the road toward Insomnia Town.

Pondering during the day as to whether or not we shall be able to sleep at night begets the idea that we will not be able to sleep at night, which idea soon becomes an obsession, and no matter how much we strive, by fatiguing the body and by other means supposed to favor sleep, sleep is not to be obtained unless the mind is freed of its erroneous belief. To imagine that because we cannot sleep terrible consequences are bound to follow is fallacious; if we die, it is because some other disease has killed us and not insomnia, for insomnia is but a symptom and not a disease.

Faith can move mountains, and a belief in our own ability to go to sleep is absolutely necessary

for those of us whose insomnia is the result of mental causes. Fear is the rock on which many a ship goes down, but hope and determination are the buoys of life. If troubled with sleeplessness the best thing to do is to forget it, to take a sane view of the matter, and, while seeking intelligent advice to free ourselves from its clutches, to regard ourselves fortunate if we procure it, but not lost if it is temporarily denied us. We cannot chase sleep, for, as Dr. Paul Dubois says in his book on the *Physic Treatment of Mental Disorders*: "Sleep is like a pigeon. It comes to you if you have the appearance of not looking for it; it flies away if you try to catch it!"

Insomnia is of course a symptom of some forms of insanity, but such insomnia is accompanied by such other striking disturbances as to enable the most ordinary physicians to make a diagnosis easily. It is a very insignificant problem, and one that needs no further consideration.

Heredity plays a part also. Some of us are born to be poor sleepers, easily awakened by the slightest noise of any kind. To be so afflicted is a misfortune, but much can be done to render sleep more sound by taking adequate precautions against such influences as have proved powerful enough to disturb us. Generally with hereditary insomnia is associated instability of the nervous

system, but the nervous system may be rendered more stable by simple measures, which measures are a quiet life, freedom from worry, fresh air, sunshine, moderation in all things great and small, each to be taken to the heart's desire.

If a compilation of all the causes for insomnia were made, it would be found that indigestion, constipation, neurasthenia, worry, eye defects, sedentary existence, high blood pressure, and arterio-sclerosis would head the list. The acute diseases, overwork, poor teeth, etc., would be smaller in number. It is easy to say "digest your food," "empty your bowels," "don't worry," etc., but it is another thing to do any of these things.

In the following chapters I am attempting to deal with the more common causes of insomnia in a manner easily understood by all, not only with the purpose of aiding the sleepless to sleep, but also to aid them, if I can, in leading a life in accord with the laws of nature.

"He sleeps well who is not conscious that he sleeps ill."
—BACON.

"Sleep is no servant of the will:
It has caprices of its own:
When courted most, it lingers still;
When most pursued 'tis swiftly gone."
—BROWNING.

CHAPTER IV.

WORRY

"Anguish of mind has driven thousands to suicide; anguish of body none. This proves that the health of the mind is of far more consequence to our happiness than the health of the body, although both are deserving of much more attention than either of them receives."—COLTON.

IN neurasthenia, as we shall learn, phobias, or fears—and fear and worry are practically identical in their effects—play a major rôle. Indeed, in many cases, the pains, discomforts, and other sensations of which the neurasthenic complains are almost entirely due to perverted thought, overwork and other factors being of minor import. When this is the case, enforced rest but adds coal to the fire, as the individual does not need rest, but therapy solely directed toward the restoration of mental balance. This balance he may obtain by himself, and how it may be obtained we will consider in this chapter. However, no attempt is made to cover the matter thoroughly, for worry, be it associated with neurasthenia or not, is too stupendous a subject to be treated adequately in a few pages.

By worry is meant undue self-consciousness, introspectiveness. The worrier permits himself unduly and insistently to think of self, and to be harassed by anything that may, in any way, do harm to that self. Yet there are many individuals, known in common parlance as "chicken" or soft hearted, who take other people's troubles to their bosoms and nurse them as their own.

The worry habit may be due to many causes. As in neurasthenia, it may be dependent upon a defective heredity or faulty child training. In fact, anything that can cause neurasthenia can cause worry. The two diseases are practically always associated, although worry may exist without the ordinary symptoms of neurasthenia. Worry may also be provoked by allowing the mind to dwell for a long time upon a real or prospective calamity. It is natural for everyone to be solicitous when confronted by or threatened with difficulties, but it is natural too, when these difficulties have been removed, for the worry over them to depart also. But given a susceptible individual, anything that can occupy his mind for even an instant can make a worry, and the source of future worries. Thus a financial difficulty may harass the business man; to it he gives undue thought

and attention, picturing only the darker side in case the prospective failure becomes a reality. He neglects sleep, hygiene; may smoke and drink to excess and, as a consequence, even though the problem be finally solved to his satisfaction, other worries take the place of that which has been removed. Practically all chronic worriers can recall some period of their existence when they permitted themselves to unreasonably cogitate and brood over some difficulty, from which time they became the hosts of all sorts of disturbing thoughts.

Worry may proceed from allowing the mind to concern itself too much with matters that were not intended for its concern. For instance, consider the hypochondriac. This is an individual to whom the subject of health is of paramount importance. He may have started out by paying attention to the laws of hygiene, but in an effort to obey all these laws has become scrupulous. He learns that food should be well masticated, and unless he performs a certain number of chews, or should he inadvertently swallow his food before performing what he thinks are the requisite number, he concludes that ill health will follow; he learns that some persons have indigestion without being conscious of it, and this fact now occupies much of his thoughts: he

studies the pulse rate, becomes acquainted with the signs of cardiac disease, and is ever on the alert for any signs that might indicate disease of that organ; he takes his temperature frequently; notes the condition of his tongue; he may become so impressed by the disease-producing powers and ubiquitousness of bacteria as to handle coins with tissue paper, or extract them from his pocketbook by means of pincers; a friend of his undergoes an operation, he concludes that he needs one too, etc.

The hypochondriac affords a good example of the chronic worrier. The hypochondriac is usually willing to admit the folly of his fears, yet he claims that they are stronger than he and so he is powerless to loosen their fetters. Likewise does the worrier whose worries run in other channels than health. The hypochondriac always finds something new to occupy his attention; he will nurse these new loves tenderly for a time and, if he tires of them, will go back to his first love—his first worry. The chronic worrier likewise finds new things to give him unreasonable concern, and if these fail or wear themselves out will revert to the first.

In this place it may be well to consider, briefly, pain in the heart and kidney regions, since certain patent medicine advertisements, by centering

the attention of those who read them on these organs, tend to promote hypochondriasis.

All of us are aware of the fact that the heart is a vital organ and that it is situated on the left side of the body. Consequently, if we experience a twinge of pain in the cardiac region we may become alarmed, especially, if we have just finished reading an advertisement elaborate in its descriptions of the signs and symptoms of heart disease, and possibly illustrated by a scare picture labeled, say, "Sudden Death," showing a person falling, apparently in agony, and with hand clasped over the cardiac region.

Now, as a matter of fact, there are few diseases which cause pain which can be definitely associated with a disturbance of the heart's action. Pain about the heart is known as angina pectoris. In its mildest form it exists as a feeling of tension beneath the breast bone and is usually associated with emotion. It is common among speakers in public; climbing a stairway rapidly may usher in the unpleasant sensation. A night's rest and a quiet life will do more for this than any drug ever will.

Again, there is a pain in the region of the heart which also radiates down the arm. It occurs in nervous persons, in excessive users of tea, coffee, alcohol, tobacco; and in emotional sub-

jects. Like the above form, it is by no means very serious and is usually amenable to treatment.

There is only one form of cardiac pain that is of any serious consequence. This form of pain is exceedingly agonizing; the heart seems as if pressed in a vise, the pain radiates up the neck and down the arm, the face is pale, the fingers tingle, the individual is covered with a clammy sweat, and has a feeling of impending death. Yet this is a comparatively rare disease. If patent medicines were taken only by individuals suffering from this form, the profits would be very, very small, and the testimonials conspicuous by their absence, for the disease is rarely cured.

While minor forms of pain may be present in valvular heart disease, most pain about the heart is nothing more than an intercostal neuralgia, or an affection of the chest muscles, which is known as intercostal myalgia. A low-grade dry pleurisy may also cause pain in the chest. These pains occur more frequently on the left side. They have nothing whatsoever to do with heart trouble and can easily and speedily be cured by any physician of the regular school. Even if the pain did originate in the heart, taking medicine, while it might relieve the pain, would not

cure the organic disease; at least, assuming that it were the proper medicine, not until it were combined with rest and a quiet life. Physicians rarely give medicines to sufferers from organic heart disease unless the sufferer be so sick as to necessitate his seeking the sick bed, because, if they are not sick enough to require bed treatment, it indicates that the heart is doing its work nicely, and medicines to stimulate it do harm; unless these medicines be combined with proper rest they fail utterly, even when required.

Pain in the back is, according to some kidney cure advertisements, an infallible sign of kidney disease. Another infallible sign, some of them tell us, is to allow urine to stand for twenty-four hours. If sediment forms, or the urine becomes cloudy, then that individual is in danger unless he at once sends for the panacea recommended. 'As a matter of fact, the only danger such an individual is in is the possibility of his spending perfectly good money for a perfectly worthless nostrum, or at least sold to him by fraud and deceit. If the urine fails to become cloudy on standing twenty-four hours then there is more likelihood that something is wrong.

For all practical purposes there are only three pains in the back which are definitely due to

kidney disease. One of these is due to stone in the kidney or ureter, and another to a kink in the ureter. When a person suffers from either of these he does not stand up with his hand on his back, like the individual in "Every Picture Tells A Story." The pain is so agonizing that only the most powerful narcotics can ease it and these often fail. It is not unusual for the sufferer to faint or to roll about the floor like a maniac. The other form of pain is due to abscess of the kidney or its neighboring organs. Medicine can never cure this; moreover, when such a state exists, palliative treatment by medicine is dangerous. Surgery is indicated and in surgery the cure lies.

When a person suffers from pain in the back it is most often a myalgia; that is, an affection of the muscles and ligaments of the back. It is common in workingmen and may be due to a variety of causes, such as improper posture, strain, exposure to cold, fallen arches, etc. In women uterine disturbances are most often at fault.

But just as a person may become a worrier because of imaginary ills or by magnifying trivial complaints, so also may he be a worrier because of disease of which he is not conscious. This is a point frequently overlooked and the worrier

is regarded as a misanthrope, whereas in reality he is sick in body primarily and in mind secondarily. Remove the first and the second will take care of itself. The body can influence the mind for ill, and the mind the body. Unless the worrier has been subjected to a thorough physical examination he should not conclude that his troubles are entirely due to his perverted mentality. Practically but one per cent. of all individuals who reach the age of thirty-five or forty are free from disease of one form or other or habits leading to such. The vast majority of people believe themselves to be in the best of health. It is the apparently minor and hidden ailments that are productive of so much harm to the individual. No disorder is so slight that it can be safely disregarded; none is so unimportant that it may not be causative of future serious disease.

However caused, and no matter what is the nature of the worry, there is not the slightest doubt that worry shortens human life. It is a slow but sure suicide and the most painful of all forms of suicide. Every day brings further contributions to our knowledge of its baneful effects. The X-ray has demonstrated that it interferes with digestion and the natural movement of the bowels, this, in turn, generating toxins which are

absorbed and which interfere with all forms of body activity; it causes dilatation of the large bowel, followed by atony; it constantly stimulates the adrenal glands, which sooner or later become exhausted, with symptoms of depression, melancholy, fatigue, etc.; it causes the liver to throw into the blood stream dextrose, and there is some reason to believe that worry has caused diabetes; it interferes with the natural heartbeat, with respiration. In short, worry first stimulates and then depresses. And it is a two-edged sword; it works in a vicious circle. Not only does it affect the body for ill, but it also causes lessened mental power and in other ways interferes with cerebral activity.

A worrier is indeed a pathetic object. And the things he worries about are both ridiculous and heartrending. Often he is so ashamed of his groundless fears that he will not breathe them to any living being. It is these repressed worries that do particular damage. The cry of the human soul in distress is for confession; when there is something upon the heart which oppresses it, its recital to a friend who sympathizes cannot help but mitigate it, to render it easier to bear. A "sob fest" is the boon of womankind, particularly when all join in on the chorus. If the worrier would confide in someone, no doubt

he would find some material comfort; but, as stated, he is often too much ashamed of his failing to do such.

Once the worry habit has taken root, it is difficult to cure but by no means incurable. For its eradication the will power of the sufferer is absolutely necessary, but exercise this power the worrier will not. Medicine can boast of but few specifics; the number of such can be counted on the fingers' ends. Yet the worrier feels sure that the doctor, after so many years of study and practice, surely ought to have something for every complaint; that if one doctor fails the old adage, "try, try again," is in order. The moment the worrier begins to think he is getting well he is on the road to recovery; the moment he thinks he is cured, he is cured. Faith in one's own power is a very good faith, and one worth possessing. The less faith in drugs the worrier has, in so far as this disorder is concerned, at least, the better.

The first step the worrier should take is to disabuse his mind of the idea that pills or potions will help him. Of course, he should make it a point to consult a physician in whom he has confidence; but if his physician can discover no impairment, then he is to rest content that no physical disease is responsible for his state of mind.

Should he be suffering from body disease then medicinal agents may be necessary. As a rule, worriers are free from organic disease. Again, if disease is present it is to the worrier's advantage to have its nature thoroughly explained by the physician. It is folly for one to harass himself by the thought that his disease is serious, or incurable, when such is not at all the case. Yet many worriers do this very thing. A heart-to-heart talk with the physician about one's troubles is often sufficient to dispel them entirely. As a rule, we magnify our woes because, with jaundiced eye, we look at them through a microscope, but once we see them as they are, in their true colors, they do not seem at all insurmountable, but as pygmies,—fit for the wastebasket.

One need not be deluded because someone has told him that it will take a long time before cure is effected. Hope can see a nearer star. Worry will never disappear of itself; he who says it will take a long time for a cure fosters this belief. A cure should and can be effected in a day, a week, a month, rather than in years.

Hygienic measures are of no great importance. For those who take the rules of right living as serious matters it is better that they be dispensed with. But of course, observance of hygiene,

while not curative, is an aid, and so is not to be disregarded entirely.

A worrier is more or less of a coward. This is a bold statement, but true. He is afraid to face his difficulties, but flees from them, only to advance further into the enemy's country, and hence to meet more foes. If one is to conquer worry he must face it. He must argue with it as he would with an individual with whom he had difficulties. What is there upon the mind that oppresses it? Is it a money stringency? Then he must reason that worry will not solve the problem, but render it more difficult, since worry will impede the proper reasoning that the difficulty requires. And again, half our forebodings never come to pass; the devil is not as black as he is painted, and neither are the futures we picture for ourselves. Yesterday is gone, its slate is clean; if not, wipe over it a giant sponge. There is no tomorrow; even if there were, tomorrow would take care of itself. "Sufficient unto each day is its own evil." We must live in the present—in the today. Our best is all that we are asked for; God will do the rest. Hurry leads to worry, and worry to the grave.

Is it disease of body that concerns us? Then if it be curable, let us do all in our power toward

effecting that cure. But the cure cannot be hurried. Nature will remedy matters in her own good time, unaided by the mind. All she asks of the mind is that it be patient, tranquil, tend its own business. If the mind be turbulent nature is sidetracked. The organs of the body can always do their work without the individual's direction, or rather misdirection; if not, to use a Hibernianism, we would all wake up dead. Let the brain remain under the skullcap where it belongs; do not employ it as a watchdog, to chase all around the body to see if the organs are shirking or not. The body must be trusted; we must not examine it every few minutes, like a boy his first watch.

Is the disease incurable? If so it is unfortunate; we are more sinned against than sinning, maybe. But that is no reason why we should mope away an existence, cursing fate, or what we will; envious of our fellows who possess that which we are denied. There are many whose state is much worse than ours,—a selfish viewpoint, but love of self rules the universe, and misery not only loves company but gets much comfort from that company. Happiness lies within, but it needs frequent aëration, else, becoming stagnant, is seduced by melancholy. True happiness is obtained by doing good, and no mat-

ter how sorry the plight of an individual there is always some useful office he may perform which will not only benefit mankind in general but himself as well. There are many people to-day who positively know that they cannot live more than a few years at the most. Some of them are young, within striking distance of fame and fortune. Yet they are not overwhelmed by their misfortune, but go about their work as usual, perform it faithfully, quietly, without whimpering, as if wholly unmindful of the fact that ere long others would be in their places. Indeed, the incurable have innumerable examples to follow, and, sick or well, it is by a contemplation of the achievements of others beset by difficulties that we all can learn a well-needed lesson. Consider the epileptic Napoleon, Cæsar, Mohammed, Alexander the Great; the rickety Pope; the scrofulous Byron; the neurotic Bach, Handel, Alfred de Musset; the hypochondriacal Johnson; the melancholy Burns, Cromwell, Cowper, Newton; the somnambulists Shelley, Condillac; the tubercular Trudeau, Stevenson; the blind, deaf Helen Keller; and many, many others. Their infirmities did not hinder them from making the world better for their having lived; they conquered the devils which tempted them unceasingly to

shed crocodile tears, even if they could not conquer their physical disabilities.

It is not only from those afflicted by body infirmities that we can learn, but from those who have suffered trials akin to those we may be forced to bear. For instance, Charles Lamb, beset by domestic sorrow but who would not be downed; the bereaved Tennyson; the imprisoned Galileo; the poor Dante. We need not search history's pages for examples; we can find them readily in our everyday life. True, all these individuals are not the happiest of mortals; nevertheless, they are not constantly groaning over their misfortunes. They have found work a panacea for the ills of idleness.

It is a good plan, when Mr. Worry puts in his appearance, to keep him waiting as long as possible; to give him plenty of cold shoulder but very little tongue. He's human after all; he's riled by curtness, even though his bland countenance belies it and his insistence leads one to believe that he's one of those individuals who do not know when they are insulted. In other words, refuse to be bothered by worry for fifteen minutes, during which time you go about your ordinary work with tranquil mind. At the expiration of that time, try it for another fifteen minutes. You may be caught napping; Mr.

Worry may this time enter without the formality of sending in his card. But be not discouraged. Say that that's your busy day, and whistle an air from "Lohengrin" to prove it. Worry will soon take his departure, seeking other fertile fields for his presence, even though he knows he's about as welcome as a leper.

And when Worry takes his departure, let him take with him, or throw after him, his valise labeled "Mr. Worry. Guide to the Insane Asylum." Worry can't guide you or drag you to such an institution. Insanity is caused by definite organic disease of the brain; worry is a functional disease. You act natural; the insane man doesn't. You think you will go insane; the insane man thinks nothing at all about it, doesn't admit he is insane, and is also quite content. In fact, the possibility of a worrier becoming insane is so slight as to be disregarded entirely.

It is a good thing, too, to read and re-read, to make notes, of worry's pernicious influence. There are a number of popular works on this subject which may be consulted, such as Salabee's *Worry* and Walton's *Why Worry?* If one keeps repeating to himself the fact that worry about his woes will not make them lighter or dispel them, rather make them worse, he may

resolve not to worry. And at the same time books may be procured that are antidotes for worry; for instance, Epicurus, Epictetus, Marcus Aurelius, Seneca, St. Augustine.

Repeating such expressions as "I should worry" is, of course, no charm against worry, no more than a rabbit's foot in one's pocket is against ill luck. However, it has some value, though slight. If, when one finds himself beginning to worry, he repeats "I should worry," or "I don't give a hang," he may find the auto-suggestion he is practicing helpful. Worry, being occasioned by insistent thought, can be replaced by the insistent thought not to worry. A psychic disease such as worry is to be cured by psychic measures. Psychotherapy consists mainly of suggestive treatment; while others can apply it to better advantage, the worrier can practice it on himself, often succeeding not only in curing himself, but others as well. It is a very good thing for those who are inclined to take life too seriously to begin and end each day by making a confession of their faith in the futility of worry, and to resolve not to worry.

Of greater value than all else in worry's eradication is the cultivation of a hobby or fad, to be practiced in the individual's spare time. The majority of worriers have plenty of time at their

disposal, which, being spent in idleness, predisposes to introspectiveness. Even if the individual has to work nine or ten hours a day, his excuse, "I have no time," does not hold good. He has time or makes time for worry, and he has or can make time for the cultivation of a hobby. What this hobby is to be is a matter for him to decide. If he is an indoor worker it is preferable that he choose one which carries him out into the open, and which compels him to walk, since the exercise and fresh air will be of some benefit. In this case he might procure an elementary work on botany, geology, or animal life great or small. He may enter into these studies with more or less aversion, but if he applies himself, interest will soon manifest itself. If he can find someone to undertake the study with him, particularly an individual of a jovial disposition, so much the better. However, one should not make of his hobby a work, or strive to learn all he can of his subject in the shortest possible time. The hobby is intended as a form of play; once it loses this aspect it may cause worry, rather than cure it.

There are many ways of practicing a hobby. Each one can consult his own tastes and choose one that will be of interest. He may take up painting or drawing; make a collection of an-

tiques, postage stamps, coins; become interested in photography; write verses or stories; study history, or literature in general; learn to play a musical instrument; study the things a microscope can reveal; develop a chemical or electrical laboratory; cultivate a garden, etc.

The hobby does good by taking the individual's mind off his woes, real or imaginary, and focusing it on other matters. It is the best remedy for worry, and the worrier should not be incredulous of its efficacy but believing. Its practice depends entirely upon himself, and unless he is willing to do everything in his power to rid himself of his malady, he deserves scarcely a scintilla of sympathy. Nursing one's woes makes them fat and sleek; by starving them they'll die of inanition. One need have no regrets on the latter score, though many individuals feel hopelessly lonely unless they have something to worry about. There is much truth in the following lines of Phillips Brooks:

There is many a trouble
 Would break like a bubble,
 And into the waters of Lethe depart,
 Did we not rehearse it
 And tenderly nurse it,
 And give it a permanent place in the heart.
 There's many a sorrow
 Would vanish tomorrow

Were we but willing to furnish the wings;
But, sadly intruding,
And quietly brooding,
It hatches out all sorts of horrible things.

The value of play should not be overlooked. A few holes of golf daily, a horseback ride, hill climbing, are beneficial. Card playing, checkers, chess, quoits, croquet, are free from strain and so can be recommended. Good, wholesome comedy and music are also valuable.

The worrier is very often of a retiring disposition. He does not like the crowds, probably because his false reasoning leads him to believe that the people he meets will talk about him, that he is particularly conspicuous, that his presence is objectionable, etc. This antipathy he must overcome. For the worrier it is a good maxim not to care about the opinion of anyone. People are too busy with the business of life to be minding other people's business. But if they don't choose to busy themselves with their own affairs then one can call to mind the old nursery rhyme: "Sticks and stones may break my bones, but names will never hurt me." The worrier should be bold: there is little danger of his being overbold. By mingling with people instead of seeking solitude he will be pleasantly surprised to find that the world is a happy sphere after all,

and its creatures are happy likewise. The formation of a pure, honest friendship is a potent antidote for worry, and often renders one as immune to worry as tuberculosis does to a life insurance agent. To frequent such places as men are wont to frequent—as clubs, fraternal organizations—to join in the song or merriment, to treat those we meet as being above suspicion, will help to counteract the fear of crowds.

As aids toward the regaining of mental balance various means are at the worrier's disposal. Rhythmic breathing and muscular relaxation are very good. Working out puzzles of different kinds, reading a book upside down, skipping every other word, crossing out a certain letter; writing with the two hands, with the left hand, with the eyes closed; balancing a stick on the finger, are useful. Reading nursery rhymes, composing similar ones; picking out tunes on the piano or other musical instrument are also of service.

Of the value of religion there is no doubt. Most "mind cures" have about them a mysterious halo of religion and accomplish whatever good they do in this way. In prayer the individual can give free utterance to his thoughts; such thoughts as he would not dare reveal to mortals, supported by the belief that if no one

else understands them God does. Faith is all-powerful, and prayer alone has healed the sick.

Worry is particularly more prevalent among the idle than among the busy. To combat the evils of idleness one should strive to be always busy about some pleasant, useful work. The cultivation of a hobby has this object. It is women particularly who suffer from absence of occupation, or from monotonous occupation. Many of the hobbies mentioned above might not particularly appeal to them; there is, however, a work for which women are naturally adapted and from which they can derive much comfort. This is the noble work of philanthropy. To be a philanthropist, some of us imagine that the founding of hospitals, schools, libraries, is necessary. While this form of philanthropy is praiseworthy, there is another form which requires only sympathy and understanding. There are thousands of individuals friendless, alone, suffering, in our hospitals, asylums, institutions, for whom a word of cheer and encouragement will do more good than the pills and potions they may be receiving. It is surprising how few of us know anything whatsoever concerning the institutions our taxes support; some of us can hardly mention more than one such institution. Yet

every State has its infant asylums, hospitals, schools, almshouses, where visitors are not only welcomed, but where they have a right to go. Few know that the almshouses are in particular need of kindly visitors; in them can be found children who, though they may have been born in the poorhouse, will not fail to arouse the sympathies; interesting old characters, men and women, whose experiences, if written, would make interesting volumes; wayward girls whose steps might be directed in the proper path by well-meaning, sincere persons; sick and dying who never have a visitor. Truly, it costs nothing, save a little time and charity, to visit these unfortunates occasionally; the good done will react on the donor appreciably, surely, lastingly.

The aged and invalids are often denied employment by reason of sympathy, and are thus afforded opportunities for worry. It is far better that their minds be kept tranquil by some sort of occupation. Books describing occupations suitable for the old and invalids may be procured at most public libraries.

A mind that is turbulent during the day is prone to be likewise at night. In fact, its turbulence is likely to be more appreciated. Pain which we have borne patiently during the daytime often appears aggravated at night. This is

due, in part at least, to the absence of noise, individuals, and other factors which occupy the mind's attention from time to time during the waking period. And so with worry. With night everything is conducive to worry's entertainment, and it is not wont to overlook so favorable an opportunity.

Worry thwarts cerebral quiet and thus sleep is defeated. While worry of any kind may produce insomnia, there is a particular worry associated with sleep. An individual finds, on one or two occasions, that he has had difficulty in going to sleep. Instead of treating the matter lightly, it causes him great concern. He cogitates on the ill effects of sleeplessness, and may believe even that it leads to insanity. During the day he frequently entertains his experience of the night before, and approaches night with fear and trembling. He convinces himself that he will not be able to sleep, which may finally become an obsession. By constantly suggesting to himself his inability to sleep, it is natural that he will not sleep.

As we have learned, all individuals do not require the same amount of sleep. Many live long and usefully, and maintain mental and physical health on as little as three or four hours of sleep out of each twenty-four. But the hours that are

sleepless they devote to rest—in bed. Taking seven hours' sleep as the amount ordinarily required, the three or four hours which lack sleep are not devoted to tossing about the bed, fretting, worrying, walking the floor, reading, working, but to rest—in bed. The mind is kept tranquil by pleasant thoughts, by sane reasoning that even if sleep is denied them no one can cheat them out of rest. A few hours of sleep—and there is no one, no matter how confirmed an insomniac he may be, who does not sleep a few hours out of every twenty-four—combined with rest in bed, are powerful enough to ward off whatever ill effects insomnia would otherwise cause. Add to these a daily neutral bath and an admirable trio is formed.

Worry about sleep will not aid one to sleep; that fact is unquestionable. That it will hinder sleep is also a certainty. In place of worrying about sleep, we should give it no concern whatever. By avoiding deeply intellectual pursuits for a few hours before bedtime, and spending these hours in simple games, or in reading a book of light verse, the mind is placed in a receptive mood for sleep. One should seek his bed at his regular time and make up his mind that if he can't sleep he'll rest, anyway. By disregarding sleep it is won. In place of the

thought, "I won't be able to sleep," replace it by, "I don't give a hang whether I sleep or not."

Life is short and fleeting. It may be true, as Job tells us, that "man is born into trouble as the sparks fly upward," but most of man's troubles man makes for himself. Those who see life as a vale of tears need to remove the bandage from their eyes and neutralize the teardrops with the water of joy. It is our duty to enjoy our stay on this planet as much as is possible; to get out of our probationary period here below as much pure, innocent, wholesome delight as is in the world's power to give. Happiness for many lies at the end of a circle; they seek it but never find it. There are many roads to happiness; that in which some are traveling contentedly and happily may not be ours. Which is our road we must learn for ourselves. And we can if we will, but we must will hard enough. Others may point out the way; they may offer suggestions which may prove valuable, but they cannot ease us of our burden. That we must bear, or discard like a rusty old coat; the latter is better.

The cure of worry depends much upon the worrier. This fact cannot be too often repeated. There is no use in waiting for a miracle; miracles may still be performed in these days of unbe-

lief, but, even so, they may not come to us. A cure is possible; there is no doubt about it. But it does not lie in any medicine yet discovered, nor is there likely to be any specific medicine for it. No doctor has a prescription that will "fix" it. It is said that there is a salve for every sore; if we could open up the skull and grease the brain we might try out any number of them, but hopelessly, fruitlessly.

"Life is like a street-car line: if you miss the first car don't go down in the dumps—there'll be another along pretty soon."

—HUBBARD.

CHAPTER V.

NEURASTHENIA

"Absence of occupation is not rest;

A mind quite vacant is a mind distressed."

—COWPER.

PRIOR to Beard's popularization of the word neurasthenia (from *νεῦρον*, nerve, and *σθενος*, strength, meaning lack of nerve strength), the medical profession had such titles as "nervous debility," "nervous prostration," "general debility," "nervous asthenia," "spinal weakness," etc., to denote what was one and the same disorder. Though some time elapsed before these supposed diverse ailments lost their individuality and its nomenclature was accepted, neurasthenia is now a definite clinical entity deserving of every consideration and scientific study. The trouble with science, medical science particularly, is that it is not wont to accept as a reality anything that cannot be proved by means of the examiner's senses. Since neurasthenia is a disease wherein the symptoms complained of by the patient are practically all sub-

jective, medical men were loath to consider it as other than a trivial complaint, not deserving of any special attention. But today its prevalence and seriousness are so well recognized that not only is it receiving world-wide attention from the medical profession, but is the rock on which numerous religious cults are being founded.

It is well to bear in mind, however, that of late years neurologists are employing the term neurasthenia less frequently. Indeed, many of the foremost physicians of the day doubt the disease's existence. No doubt many of the cases formerly diagnosed as being neurasthenia were not neurasthenia at all. A very careful examination of such individuals would have demonstrated the fact that eye defects, diseased teeth, gums, tonsils, kidneys, a low-grade tuberculosis, mental complexes and other problems, etc., were responsible for the nervous symptoms. Obviously, it is impossible to tell whether or not a disease is neurasthenia unless a careful examination be made. It is true, however, that cases of neurasthenia due to causes which are enumerated below actually do exist.

In popular language neurasthenia is "nervous breakdown." It is purely a functional disease, not characterized by any gross or micro-

scopical lesion that can be found by present methods of examination. Observers are inclined to regard simple cases as due to a fatigue neurosis of the nervous system; that is, a state of the nervous system wherein work has exceeded repair.

The disorder is insidious in its onset. It is only after months or years of overwork or improper living that the afflicted begins to realize that all is not well with him. Once fully established the disease tends to persist for a more or less indefinite time. Wronged nature is a severe taskmaster. She suffers wrongs at first with patience, but should the sinner continue to err she forgives only after exacting a severe repentance.

Much neurasthenia depends upon hereditary influences. As Osler says, we are not all brought into the world with the same supply of nerve capital. Born of sickly parents, we are visited by their maladies. Plumbism, migraine, the gouty diathesis, alcoholism, syphilis, moral perversions, the neuroses in the progenitors are prone to weaken the nervous stability of the offspring, thereby rendering him a prey to nervous and other disorders, if early, prompt, and effectual measures are not instituted to guard against them. Improper child training, which includes im-

proper habits of sleep, eating, exercise, study, etc., does much to undermine the stamina of healthy children, and so renders them susceptible to the disorder.

Neurasthenia is a disease of the working period of life. It is rare before twenty, still frequent enough. It attacks the sexes without distinction, and is particularly common among Hebrews, Slavs, immigrant Scandinavians, and in northern latitudes. Climate has been blamed for the latter fact. When the English, at the time Beard's first articles appeared, disparagingly termed it the American disease, they were right, for it is one which we must claim as mostly our own. The pressure under which we live, the competition under which we live, the long hours of labor and the short hours of rest, the worry associated with the problem of living, the strife after the immortal dollar, feed its fire.

There are many other factors which may either cause or lend a hand in its causation. Any disease, whether acute or chronic, may so devitalize the nervous system as to throw it out of working order. Injury, slight or severe, may start it on its way. Of much importance are excesses of all kinds. Too free an indulgence in alcohol, coffee, tobacco, tea, long kept up, may so excite the nerv-

ous system as to keep it constantly in tension, until it finally breaks. The French injunction, *Cherchez la femme*, is no place better applicable than in this disease. Venery, masturbation, unnatural desires and practices, are very patent contributing factors.

Mentally the neurasthenic is much disturbed. He is irritable, memory is defective, attention disorganized, insight dulled. The capacity for mental work becomes a burden; to read, to write, or even think, may produce so much discomfort as to be almost impossible. Depression and introspection harass his well-being. Palpitation of the heart, so often an accompaniment of the disorder, leads him to believe he has serious disease of that organ; while sexual disturbances harass him more. Fear is generated—fear of men, of places, of trains, of ships, of light, of darkness, in fact fear of any kind may be his. While ready to admit the utter lack of reason in his phobias, he confesses himself powerless to free himself. He is peevish, faultfinding, easily excited to rage or to tears. Affection for wife, children, boon companions, may be lost; their sight may be repulsive, and rather than see them he may remain away from home or deny himself to visitors. He finds something to worry about, most probably a groundless something. His

mind is in a state of revolution: all is chaos, life is almost unbearable, for—

“The mind is its own place, and in itself
Can make a Heaven of Hell, a Hell of Heaven.”

—*Paradise Lost.*

Sleep is practically always disturbed. To be a neurasthenic is to be an insomniac, but the reverse is not true. There may be a difficulty in getting to sleep; the sleep may be fragmentary. It may be disturbed by bad dreams. The sufferer may be able to sleep only at night, never by day, no matter how fatigued. Others fall asleep when they most desire to keep awake. Their sleep fails to refresh; they awake exhausted, troubled, weak. Knowing the difficulty they have in wooing slumber, they are tortured during the day with thoughts of night. They approach it with fear and trepidation, obsessed with the idea that sleep has ostracized them, that they cannot sleep, no matter how much they strive. Perfused with the phobia, “I won’t be able to sleep,” they cannot sleep until the mind leaves the rut and finds the open road. And the open road is tranquillity.

Hearing, taste, smell, and vision are often disturbed. Ringing in the ears may prove troublesome; the sound of the clock, the ringing of the

doorbell, the prattle of children, may drive the sufferer frantic and force him to seek solitude and stillness, and even then peace is not to be found, for the mind still is turbulent. Food that formerly procured praise now excites complaint; it may taste badly, it may not be fresh, it has not been cooked properly, and thus the affectionate, sympathetic wife is driven to tears, fearful that love has flown out of the window, into a fairer bosom, maybe. Bad odors may be a source of reproach, where none can be found. The eyesight may become dimmed, there may be an inability to fix attention on the printed page; there may be blurring of vision, specks before the eyes, pain in the eyes, etc.

Headache is a common feature. It may be spontaneous, or induced by exertion no matter how slight. Usually, it is at the back of the cranium, but it may occupy any other region, as the frontal, the temporal. Disagreeable sensations in the head, as dreariness, lightness, murmuring, buzzing, are often exasperating.

Backache, generally appreciated in the small of the back, and frequently radiating up to the neck and down the flanks, is more or less constant. Tenderness of the spine, stiffness, numbness, pricking, tightness, pain, soreness, and hosts

of other disagreeable sensations may be experienced.

Nervous indigestion is not often absent. The appetite may suffer no alteration or it may be diminished or increased. Weariness after eating, heartburn, gaseous eructations, borborygmi, constipation, contribute to further torture the sufferer. Palpitation of the heart, most often due to indigestion, fosters the patient's attention on that organ. The arteries may visibly throb, thus simulating disease of the aortic valve, for which it is mistaken by those possessing some knowledge of medicine. The pulse is small, soft, and rapid. Localized sweatings, flushing, coldness of the extremities, indicate the disturbed condition of the vasomotor mechanism.

All the secretions of the body are diminished. The diminution in the excretion of the urine gives rise to burning sensations, frequent desires to urinate, etc. The reaction of the urine changes, which results in a production of phosphates, which, being white, give a milky appearance to the urine, the sufferer imagining that this represents a loss of "vital fluid," and so becoming an easy victim of the charlatan. The lessened nerve power, as well as the nervous instability, produces loss of sexual power, premature ejaculations, nocturnal orgasms; the sexual appetite

may so diminish, moreover the act may be so disgusting, and so strain marital relations, as to lead to divorce.

Since the above symptoms constitute but a few of the many sensations of which the neurasthenic constantly complains, it will be seen readily that it is a disorder with not only a wide etiology but also a diversified and complex symptomatology. By the trained physician it is not apt to be mistaken for any other disease, but that the ordinary practitioner is not curing the affection is readily attested by the hosts of sufferers who are constantly traveling the rounds, and who, because of this fact, are known to physicians as "rounders." The physician, however, is not to blame. There is no one drug that is a specific for the malady; it requires time and patience. One thing physicians' patients fail to appreciate is that physicians' advice is often of much more value than their prescriptions. If patients would harken to advice more, and closely follow instructions, recourse to drugs, or *placebos*, would not be necessary. There is a place for drugs in the armamentarium of the practitioner, but the vast number of people found in physicians' offices require no drugs, but simply a knowledge of how to live and a willingness to live rightly after knowing how. But the doctor

who doles out advice, no matter how sound it may be, is regarded as a numskull, whereas the one who is parsimonious of advice, but lavish in the dispensing of bread pills or what not, is ranked as a very competent man. I must be pardoned for perpetuating Barnum's hoary saying, "that the public likes to be fooled," but it never was truer than at the present time.

The questions which to neurasthenics are most important are, Will they get well? What can be done to cure them of the trouble?

The first question can generally be answered in the affirmative. The vast majority can be cured, or markedly relieved, provided that intelligent treatment be instituted and the sufferer possesses the fortitude and patience to carry out the measures required of him. The prognosis is, however, modified by certain conditions. An inherited neuropathic tendency does much to offset the possibility of a permanent recovery. Cases occurring before twenty and after forty years of age are less amenable to treatment, though much can be done to improve their state. Relapses are common, but these should not discourage the sufferer, though we must admit that every time the machine breaks down it becomes weakened and repair is necessarily longer delayed. It must be remembered that cer-

tain perversions may follow its wake, not so much as a direct result of the disease, but as acts of commission. Chiefly is this true of inebriety. There is a generalized notion that alcohol steadies the nerves, and thus the sufferer may be called upon to try the so-called tonic effects of beers, wines, or liquors, with the result that an alcoholic appetite becomes developed. To tirade upon the detrimental effects of alcohol, whether sick or well, is, I feel, unnecessary, but I cannot refrain from stating that under no consideration is alcohol in any form to be taken at any time during the course of the disease, if ever, unless a competent physician so advises.

Prevention is, by far, better than cure. The rich men who contribute millions to the stamping out of such diseases as typhus, plague, etc., are not only doing a worthy act of charity, but are saving their own skins at the same time. If among the poor and unfortunate communicable diseases are allowed to flourish it will not be long before these same diseases are carried to the millionaire's door; money may be powerful, but all the money in the world cannot save a loved one, once he is in the throes of a ravaging disease.

As far as we know, neurasthenia is not a germ-borne disease, but we do know that unhealthy parents may directly or indirectly transmit it

to their children, and that improper training of the offsprings of apparently normal parents may occasion or predispose to the affection. The real treatment of neurasthenia, then, should be preventive, and should be begun at birth. I will not debate the question whether or not we are justified in preventing the marriage of persons suffering from diseases likely to be visited upon their progenies. We know that certain diseases are inherited, as some types of insanity, epilepsy, hemophilia, migraine, ichthyosis, nervous derangements, etc. The Biblical passage, to the effect that the sins of the fathers would be visited upon the children of the third and even the fourth generation, most probably had reference to that grim disease syphilis, which, we know, wreaks fearful havoc. Charity and pity should be the stimuli prompting sufferers from these diseases to forswear marriage, but the call of brute instinct is too strong, I fear, to mend matters. Neither can I conscientiously advocate limitation of offsprings as a preventive measure. Marriage obligates propagation of the race. The law of God so ordains, though the law of man may rule otherwise.

Be these affairs as they may, if we bring children into the world, it is our solemn duty not only to guide their footsteps along the path of

virtue, but the path of health as well. To neglect the child's corporeal existence is practically as sinful as to openly expose the child to temptation. Particularly should parents, themselves sufferers from neurotic or other disease, be mindful of this fact. Because of neglect of it there are today people in madhouses or walking the streets who, in their hearts, think of their parents with a sorrow akin to hatred because it was in the latter's power to have shielded them from the torments which now enslave them, but which opportunity they passed by either through neglect or ignorance.

How, then, should a child be reared so as to minimize the tendency to the neuroses?

First of all it is necessary that it receive adequate hygiene. By this is meant plenty of sleep, a maximum of fresh air, careful baths, and good food. The latter is of more importance than it appears on first sight. The stuffing into infants of all sorts of proprietary foods (so-called) is tremendously detrimental. The best food for any animal is the milk of its mother. If for any reason a mother be unable to supply her child with breast milk, the next best food is pure, wholesome cow's milk. The alarming death rate among artificially fed infants should hasten mothers, especially that class who con-

sider child-bearing an unwelcome burden, and who are so devoid of maternal affection, too lazy or too stingy as not to nurse their flesh and blood, to realize that they are mothers in name only, obeying the call of passion and paying the price rather than fulfilling the divine mission ordained for them with their creation. Should any mother wilfully and without just cause, no matter whether she be the wife of potentate or peasant, deprive her offspring of the nourishment which she alone should furnish it, and should that child succumb to disease of faulty nutrition, or should its vitality be brought to such an ebb as to render it a prey to other disease, then that mother is morally culpable. I refrain from saying she is a murderer, but such a title might suit her better.

Allowing children to partake of meat, coffee, or tea is responsible for many neurotics in later life. There is no excuse for ignorance as to what constitutes the proper food for any child at a given age. Physicians are not so few that they may not be consulted; but if the immortal dollar is esteemed more than the child's health, there are numerous societies for infant welfare which will be glad to supply the information gratis.

The neurotic child needs careful training.

Neurotic parents cannot do this, nor should they attempt it. Rather let the child be under the tutelage of some broad-minded instructor; and since its mind is weak and easily disturbed, let the body be cultivated more than the mind. Schoolwork should not be permitted until the child is seven or eight years old. Home study should be as light as possible. Talks of bogies and other stories which tend to excite the mind and engender fear are to be tabooed.

If the mother be given to spells of nervous excitement the child should be hustled away during their sway. Domestic altercations should never be permitted in the child's presence. Talks that foster a spirit of cheerfulness alone should be indulged in. It is of course necessary that discipline be maintained, but this should be left to one who is not apt to overdo it. Gentleness and kindness will lead more steps aright than the Solomonic code.

The physical make-up should be hardened by outdoor sleeping—or at least sleeping in a well-ventilated room—by systematic exercise in the open air, by morning cold baths, friction, etc. The child's summers should be spent in the country.

When the time comes to decide the future career of the child, let one that favors the

muscles rather than the mind be chosen. Outdoor occupation is preferable to an indoor one, and a country life to a city one.

The proper treatment of neurasthenia, once it becomes fully established, belongs to the physician. It is quite impossible to formulate any one method of treatment, because the treatment of each individual case is entirely different from another. There are, however, a few points of treatment which it may be well to consider, inasmuch as they are more or less applicable in the vast majority of cases.

One of the most important adjuncts in the treatment of neurasthenia, the agent that is most insistently demanded by the therapist, is rest. The rest may be absolute or partial, dependent upon the temperament of the individual, the sex, and the financial condition. In minor cases, especially where the symptoms result from overwork, a few weeks' cessation of work and a sojourn amid new scenes may be all that is necessary. Retiring just after the evening meal, and not arising until the toil of day demands, may prove efficient. A rest at midday is also beneficial.

In severe cases absolute rest must be enjoined. This entails not only a complete separation from business, but an isolation from family

and friends. A sea voyage may fulfill this requirement admirably, or a visit to a foreign country may prove as serviceable. It must be borne in mind that the large cities must be avoided, else the benefit is lost. London, Paris, Berlin, and all other European centers are as noisy and exciting as American cities. Norway in summer, Egypt in winter, and Mexico at any season of the year are the best retreats.

The Weir Mitchell rest cure is often employed. Since this requires experienced nurses for its application, it is not within our province to discuss it. In general, however, it consists of absolute rest in bed, isolation from family, careful and frequent feedings, massage, electricity, suggestive therapeutics, etc. When properly carried out it produces marked improvement, but relapses may occur at any time during the treatment from the slightest break in technic. While it may be instituted in the home, it is much more efficaciously employed in a sanatorium.

Of the value of rest there can be no doubt. Time must be given the shattered nervous system to recuperate. To suggest an ocean voyage, a month at a sanatorium, a few weeks at the seashore, would not meet the approval of the man of moderate circumstances who needs

must work for a living. Though it is a rich man's disease, the poor man can do much to improve his own state. A Sunday excursion on the river, frequent visits to the theater, a game of golf, long siestas on the farm, a fishing trip, would not strain his pocketbook. While there is a certain amount of work associated with these avocations, such work is prone to call into play parts of the brain that have long been dormant, while the remainder of the brain is more or less at perfect rest.

It was in 1860 that John Hilton first delivered his lectures on the value of rest in the treatment of disease. His scholarly remarks are now classic utterances. On page 6 of his work, "*Rest and Pain*," there appears the following letter from a Doctor Hood, which, I think, will prove conclusively the benefits of rest upon the mind.

"MY DEAR SIR—In reply to your inquiries, I may state that I am frequently applied to for the admission of lunatics to this hospital (Bethlehem), whose insanity is caused by overmental work, anxiety, or exertion, for whose cases nothing is required to restore the mental equilibrium but rest. Therapeutic measures are not necessary: all the mind seems to need is entire repose. I do not by this mean to imply that the

patient reduced to a state of nervous hypochondriasis, or the depression of melancholia, is to lead an indolent life. Such a course would only aggravate the disease, and probably result in complete dementia; but that those faculties which have been overstretched should have an opportunity of regaining their elasticity by rest and relaxation. For example, an accountant whose whole day is spent in calculation and thought becomes, by overwork, so mentally fatigued that he is incapable of working out with accuracy the most simple sum in arithmetic. Sensible of his incapacity, which perhaps may result in the loss of his situation, and with poverty then staring him in the face, he becomes melancholic, and medical advice is sought. His physical functions are healthy; no medicine is required or taken, but a holiday from the counting house, freedom from all thought and anxiety, the substitution of amusement for labor, restore his mind to a healthy state, and he returns to business as competent as he ever was. I have now under my care a man who for some years past has been subject to occasional attacks of melancholia. He is occupied as a compositor, and, being both a clever and trustworthy man, is constantly employed. He works early

and late for many consecutive hours, and for some months all goes well; but the stretch on the mind ultimately causes a breakdown, from which he cannot rally, unless he leaves his business for a month or six weeks, and takes a complete holiday. He tells me that the cause of his mental suffering is concentration of thought and that rest removes the weight and agony of melancholia. In a word, he takes a month's holiday, engages in no occupation requiring thought or bringing with it anxiety, and returns to his duties with the mind of a young man. Some people may reply, 'This is not rest; it is only a change of employment.' I maintain it is perfect rest to the faculty which has been overworked. Of course we do not propose that the whole mind should remain fallow, but that the pressure should be removed from the particular part which is fatigued.

"I could give you many illustrations from the wards of this hospital, where we are called upon to treat mental symptoms in the cases of governesses, students, clerks, and clergymen; and rest is all they require, and with that the most aggravated cases are restored."

The old order rarely changes. What was true concerning rest in the days of Hilton is true today, if not more so.

One agent of value within the reach of the humblest of us is water. Neurasthenics seem to possess a decided aversion to it either externally or internally. This fact helps to explain the diminution of the body's secretions, practically always a concomitant of the disease. Water is beneficial in many ways. Internally, it is the most natural and safest cleanser of the system yet discovered. Externally, properly employed, it is a tonic. Short, cold baths taken in the morning, and combined with sprinkling, showering, or rubbing, prove invigorating to the body in general and the nervous system particularly. The spinal douche is very valuable. It is administered by means of nozzles held about ten feet away from the patient, a strong stream being played up and down the back for a few seconds only. Prior to its use, the patient receives a short, hot-water bath. The cold spinal bath may, at times, be rendered more effective by alternating it with a hot douche.

Should active exercise be contraindicated, some method must be found to overcome the sluggishness of the system that would otherwise develop under the rest cure. This is combatted by means of massage, but since it can only be properly carried out by a skillful masseur an

enumeration of the various movements employed would not prove beneficial. Electric treatment falls in the same category; that is, it requires a trained operator to use it successfully.

Diet is also a matter of importance. Though many simple and elaborate diet schemes have been advocated, the gist of them all is to overfeed rather than underfeed, provided the digestive organs be in a receptive mood. Milk and milk products, beef extracts, vegetables, and cereals should form the main bulk of the diet. If indigestion or constipation be present, they are to be treated along the lines suggested in the chapter pertaining to those disorders. Nerve stimulants, such as tea and coffee, are to be avoided. Caffeine-freed coffee is now obtainable, and to its use there is no serious objection. Tonics, nervines, or other medicaments are not to be employed except under the advice of a physician.

It goes without saying that if some pathological disease apart from the neurasthenic condition be present, it should receive proper medical attention. With its improvement the general state of health becomes improved, and the neurasthenia is more easily conquered.

For the insomnia practically always present in the disease, a warm bath or an alcohol rub

at bedtime generally promotes sleep. A glass of hot beef tea, malted milk, or cocoa will aid materially. Since the insomnia is but a symptom of neurasthenia, it is futile to treat the insomnia and neglect the underlying conditions. As long as the cause is not removed sleeplessness will persist. Once the cause is removed the insomnia will right itself.

As before stated, no definite treatment can be outlined for neurasthenia. Its therapeusis belongs to the physician. But the sufferer must aid himself if he wishes cure. He can do this by being patient and zealous in carrying out the doctor's instructions. He must not give way to thoughts of doubt concerning his recovery, but constantly harbor the truth that he will get well. And he will, else the fault is mostly his own.

"In everything the middle course is best; all things in excess bring trouble to men."—PLAUTUS.

CHAPTER VI

INDIGESTION AND CONSTIPATION

"The fate of a nation has often depended on the good or bad digestion of its prime minister."—VOLTAIRE.

"Physic is of little use to a temperate man."—BACON.

SOMEONE has written that heaven is largely a matter of digestion, which expression the punster further amplified by saying that the most masterful and soul-stirring depictions of hell-fire were all conceived by dyspeptics in the throes of paroxysms of gastralgia. Be this as it may, it is certain that persons subject to digestive disturbances spend many an unhappy hour, but in the vast majority of cases they alone are to blame for their discomforts.

It is a rather surprising fact that so few of us possess any definite idea of the mechanism by which food is transformed in the digestive organs into less complex material capable of replacing the waste constantly occurring in the system with every breath we draw. If we had, we might eat more sanely, and eat to live, rather than live to eat; and instead of regarding the

stomach as a machine powerful enough to break stones, we might rightly realize that it is a delicate and a sensitive organ, willing and ready to functionate properly when not maltreated, but more susceptible to be rebellious when overworked.

The greatest mistake we make is to consider the mouth as but a temporary receptacle for food—a place to chew a little, taste littler, and digest littlest. Our teeth were given us for a greater and more useful purpose than adornment. They were intended for chewing—not the rag, but food; and the salivary secretions have a more important office than that of lubricating the mouth. Primarily, they were intended, not only to moisten every bolus of food so as to facilitate deglutition, but mainly to furnish enzymes, or ferments that would transform starch into sugar. If the food is allowed to pass into the stomach with no consideration for salivary importance, the burden of starch digestion is thrown upon the intestines, which must, therefore, work overtime, and maybe be unequal to the task. Moreover, Hemmeter, a very able authority and author of several volumes on “Diseases of the Stomach and Intestines,” has stated that saliva during the process of mastication liberates into the blood

stream a hormone that stimulates a flow of gastric juice. In other words, the saliva is not only valuable inasmuch as it furnishes enzymes which start the process of carbohydrate digestion, but also because it furnishes an agent which forewarns the stomach of the food it is about to receive, and, being forewarned, the stomach is forearmed.

Much indigestion results from imperfect mastication. Horace Fletcher has demonstrated and proved conclusively that if food is masticated until every particle of taste has left it, that in time the palate will learn to close reflexly, thus not permitting unchewed food to pass it. By his teachings many dyspeptics have been markedly benefited, if not wholly cured of their stomachic troubles. To allow imperfectly chewed food to pass into the stomach is a sin against nature. It taxes the stomach to extra, often impossible, endeavor, lengthens the time of digestion, and, in fact, what digestion that is accomplished is improperly done, inasmuch as the juices are incapable of permeating all parts of the ill-prepared masses. As a result of this, fermentation occurs; organic acids, such as lactic and butyric, are formed which not only cause the sufferer temporary pangs of pain and belching, but also serve to irritate the mucous

membrane of the stomach, leading to a production of mucus. The circulatory mechanism of the organ is disturbed, and if the process is long continued more or less permanent pathological changes occur. Fermented material, after being buffeted about the stomach for a considerable time, is forced through the pylorus into the duodenum, or first portion of the intestines. It is as if the stomach said: "See here, I've done about all I'm able to for this stuff. See what you can do with it."

When food is properly digested by the stomach its entrance into the duodenum causes a liberation of pancreatic juice, bile, and the digestive juices of the small intestines. The mechanism by which this is effected is rather complicated, so it need not concern us here. When the food is improperly prepared it is forced out into the intestines at a time when least expected. We know that when food enters the stomach the other digestive glands assume increased activity, and pour out their juices in happy anticipation of the coming feast. Therefore, these juices are practically wasted. The intestinal secretions are unable to overcome the foreign stomach acids, with the result that the reaction of the intestines becomes acid instead of remaining alkaline, as it is normally;

irritation is produced, and, finally, intestinal indigestion is added to gastric indigestion.

Well-masticated food is promptly, thoroughly, and properly digested, and more of it is absorbed into the system. Because of the latter fact less food is needed to satisfy the demands of the body for new material. Endurance and strength, as well as mental activity, are increased, as numerous tests have shown.

A potent factor for indigestion is diseased teeth. A spongy condition of the gums, which bleed easily and exude pus, we know as Riggs' disease. The toxins generated by the micro-organisms causing the disease, being absorbed into the blood stream, are not only causative of indigestion, but also of many other diseases, as clinical testimony will verify. Therefore, it behooves the sufferer from indigestion particularly to give his teeth the attention that is their due. If they are diseased, a capable dentist can put them into a healthy condition in quick time. The benefit that may result is by no means infinitesimal.

There are, of course, many varieties of indigestion. Thus, indigestion may be stomachic or intestinal. It may be due to deficient secretion of acid, to oversecretion, to dilatation of

the stomach, to ulcer or cancer of the stomach, to defective motility, etc., but most often the indigestion did not originate in the stomach or intestine, but is secondary to disorder of some other part of the body.

The form of indigestion which most often provokes insomnia is that caused by fermentation, which most often manifests itself by pain and flatulence. There are many agents recommended for this condition, the simplest of which are a few drops of ginger, peppermint, aromatic spirits of ammonia in a glass of hot water, sipped slowly, compound tincture of cardamom in teaspoonful doses, massage of the abdomen, heat to the stomach, etc.

When indigestion has existed for any period of time, it is to the sufferer's advantage to consult a physician. The taking of the various so-called sure cures for dyspepsia, advertised in the daily press and elsewhere, is not good practice. If we wished a suit made, we would go to the tailor; to have a watch repaired, to a watchmaker, etc.; but when it comes to a question of medicine, we are our own doctors, or else allow someone not versed in medical science to do the prescribing. The doctor does not suffer because of this; it rather increases his revenue, because the various diapepsins, dyspepsia tablets,

and what not are much overrated. If they do good, it is only temporarily. No disease can be cured unless the cause is removed, and the only person competent to find the cause is one who has devoted his life to the subject—a physician.

But since most of the disturbances of digestion depend upon sins of omission and sins of commission we can, at least, doctor ourselves by aiding nature as much as possible. Regular hours for meals, moderate exercise, fresh air, attention to the sanitation of our mouths, the mastication of our food, and the spending of suitable time at table are salutary measures. The choosing of suitable food is also important. As Osler says: "The platter kills more than the sword." Hot bread, ice water, pancakes, pies, tarts, heavy pastries, fried foods, ice cream, soda water, condiments, alcohol, tea and coffee, have ruined many a digestion. Moreover, we should remember that the majority of us eat too much. George Cheyne, who reduced himself from 448 pounds to comfortable proportions, in his four hundred and forty-eighth aphorism says: "Every man after Fifty ought to begin and lessen at least the quantity of his Aliment, and if he would continue free from great and dangerous Distempers and preserve his Senses and

Faculties clear to the last, he ought every seven years to go on abating gradually and sensibly, and at last descend out of life as he ascended into it, even into a Child's Diet." We should bear in mind, too, that because Adam and Eve ate themselves out of house and home, it is no logical reason why we should follow their ill example.

Constipation is another malady which causes much ill health. By constipation is meant the passage of insufficient amounts of fecal matter, or its prolonged retention in the intestinal canal. It is not a disease of itself, but is simply an indication of some underlying functional or organic disease.

A movement of the bowels is produced in the following way: After the food is digested by the stomach, it is passed, a little at a time, into the small intestines. The secretions of the small intestines, pancreas, and liver are alkaline, and so when the interaction between the acid gastric juice and the alkaline juices occurs, an irritation, with the production of gases, results which serves to stimulate muscular contractions of the bowels. Added to this, the respiratory movements of the diaphragm impart a backward and forward motion to all parts of the canal, churn the food contained in it,

and aid its passage onward. The passage is further aided by nerve endings situated in the gut.

In the small intestines are secreting glands which serve to further digest the food, and cells which cause its absorption into the blood and lymph streams. By the time the digested food reaches the cecum most of its nutriment has been absorbed, but as it still contains much fluid it is easily propelled along. At the cecum, or beginning of the large intestine, the gut ascends perpendicularly, so that progress is slow and much water is thereby abstracted. Through the transverse colon the food, which now is waste, is pushed by means of the contractions of the abdominal muscles and the diaphragm, and is passed into the descending colon. Thence, by force of gravity and the contractions of the muscles of the gut, it descends into the sigmoid flexure of the colon; thence into the rectum, being turned from side to side by means of the valves of Houston. In the anal canal, its last resting place, are numerous sensory nerves, pressure on which creates the desire to defecate, which latter is accomplished by means of the abdominal muscles and the diaphragm exerting pressure on the gut.

When for any reason the contents of the in-

testines are not adequately removed, the entire system becomes perverted. The food waste is robbed of its liquid portion, noxious gases are formed, which are partly absorbed; the action of the flora of bacteria constantly present in the intestines generates toxins which also are absorbed. Indigestion, distention of the stomach, fetor oris, coated tongue, headache, drowsiness, mental dullness, insomnia, bad dreams, vertigo, angina, anemia, chlorosis, melancholia, hypochondriasis, and numerous other symptoms may result.

While the causes of constipation are numerous, for the most part the disorder is, like indigestion, the result of sins of commission and omission. In the description of the mechanism by which the bowels are moved we have learned what an important part the abdominal muscles and the diaphragm play. Therefore, those who lead sedentary lives are predisposed to the affection, and it behooves such persons to exercise. At many of the well-known sanatoriums exercise is an important adjunct of treatment. Massage, electric batteries, medicine balls, etc., are considerably used in these resorts, but much better results can be obtained by bicycle riding or horseback riding. But for those who for one reason or other cannot in-

dulge in any of these the following exercises are recommended in a Bulletin of the Texas Board of Health:

EXERCISE 1.—The best “liver loosener” is known as the “cradle rock.” It is performed in the following manner: Stand with the legs wide apart. Raise both arms above the head, clasp the thumbs together, and stretch the arms at full length, rigidly upward. While in this position, bend the body over as far as possible to the right, and then to the extreme left. Eight times each way will be enough in the beginning, but you will accustom yourself to this exercise so that you can rock fifty times in each direction. This exercise massages the liver and greatly strengthens and stimulates that organ.

EXERCISE 2.—Stand as before, with the legs wide apart but with the hands on the hips. Now bend over to the right and try to touch the floor, just in front of the right toe, with the right hand. Leave the left leg straight, but bend the right knee. While thus pointing downward with the right arm, throw the left arm straight upward in the air. As soon as you touch the floor, recover to first position with the hands on the hips and legs far apart. Do this eight times: then reverse to left side, putting right arm in the air and touching the ground in front

of the left toe with the tips of the fingers of the left hand.

EXERCISE 3.—Stand with legs together, feet firmly planted on the floor. Stretch arms out straight at sides and on a level with the shoulders. While in this position, rotate the trunk on the hips from the extreme left to the extreme right. Do this until fatigued, and increase the number of times you do this from day to day.

A frequent cause of constipation is laziness. The call of the bowels for evacuation is neglected and, consequently, the sensory nerves of the intestines become atonic. The false modesty of women, who neglect their toilet duties for fear of exciting attention, is a very common factor about which no more should needs be said. We must remember that the bowels are susceptible to good habits, but more so to bad ones. It is perfectly possible to train them by going to stool at a regular time each day, so that one or more evacuations may be had; even if, for the first few days, no success is met with, the practice should be continued. Results will surely follow. Another habit deserving of condemnation is the reading of newspapers or other literature in the toilet. This is detrimental, inasmuch as it does not permit the whole mind

to be concentrated upon the act about to be performed, so that the movements may be incomplete or the desire to evacuate be temporarily destroyed.

The failure to take a sufficient amount of water daily is conducive to constipation, by reason of the fact that it tends to harden the fecal mass and so render its passage difficult. It is well that water be taken *ad libitum*. Not only is water beneficial to the bowels, but to all other portions of the human system as well. It was formerly thought that water taken with meals diluted and so lessened the efficiency of the gastric juice. Physiologists are now inclined to believe that water stimulates the gastric function. However, no harm will be done, even should there be a deficient secretion of acid, if water be taken in full portions between meals. The sipping of a cup of hot water or hot milk on waking, or before meals, will often give relief in obstinate varieties of the complaint where all other remedies, medicinal and otherwise, have failed. A few drops of lemon juice added to the water enhance its value.

Overeating and the stimulation of the appetite by means of condiments, wines, alcoholic liquids, and rich foods are worthy of consideration. Coffee is constipating owing to its empy-

reumatic oil, and tea because of its tannin content. One should not eat too much, nor yet too little. Too much food is apt to distend the gut and lessen its contractile power and its sensibility, while too little food leaves but little waste for the intestines to work upon. A mixed diet containing both nitrogenous and carbohydrate foodstuffs is the one par excellence. A plate of wheaten grits at breakfast or the use of bran mush is often productive of bowel movements. If bran is used it should be thoroughly washed and boiled for half an hour, if purchased in bulk. Sterilized bran is to be preferred. It may be mixed with other food, or hot water may be added to it. A tablespoonful is to be eaten at each meal.

Green or canned corn is serviceable. Fruits in general are good. Figs are especially valuable. Strawberries, raspberries, and blackberries tend toward constipation. Blueberries and prunes are the most laxative of all fruits. A favorite remedy of Von Noorden is to have his patients soak prunes in cold water for twenty-four hours. They are to be eaten without cooking. The better the quality of prunes used the better the results. In general, bulky foods, such as fresh vegetables, coarse Graham bread, bran bread, fruits, special vegetables—as carrots, parsnips,

turnips, spinach, and kale—are to form a regular rôle in the dietary; while white bread, pastry, condiments, potatoes, bananas, and heavy foods are to be omitted.

Kohnstamm, believing that most constipation is due to meat eating, in his treatment of the condition, excludes all meats, fish and poultry. Milk, cocoa, milk soups, etc., form the major part of the allowable food. If flatulency develops the milk is reduced in amount. Meat soups and meat broths are not objected to. Such a diet is said to bring results in from one to four days. Meat, especially white meat, is renewed after one or two weeks of treatment, but at the outset it is best not to use it more than once a day. Kohnstamm is very enthusiastic over the value of flaxseed in this condition, he being probably the first one to use it for such a purpose. The amount of flaxseed recommended is from two to five teaspoonfuls, and is best administered in soups, teas, or other liquid food. The seed should, of course, be fresh and clean; if necessary, washed before using. It should not be bitten, but swallowed whole. The action is mechanical, moisture being absorbed which, by reason of the bulk it produces, stimulates peristalsis.

Attention to the skin is often beneficial; cold baths, or, if these produce depression, hot baths,

followed by vigorous rubbing of the abdomen, are productive of good.

There are, of course, many causes for constipation, and consequently there is no specific for the removal of it. If some underlying disorder, such as heart or kidney or nerve disease, exists, or should stricture of the bowel, as an example of a local cause, be present, active treatment at the hands of a competent and ethical practitioner of medicine or surgery is indicated.

The use of drugs as a routine procedure is to be condemned. As Oliver Wendell Holmes rightly remarks: "The disgrace of medicine has been the colossal system of self-deception, in obedience to which mines have been emptied of their cankering minerals, the vegetable kingdom robbed of all its noxious growths, the entrails of animals taxed for their impurities, the poison bags of reptiles drained of their venom, and all the inconceivable abominations thus obtained thrust down the throats of human beings suffering from some fault of organization, nourishment, or vital stimulation."

There are times when drugs are imperatively needed, and also times when drugs must be used until a normal state of the bowel has been obtained; but barring these two exceptions drugs

only serve to aggravate the condition. Most of the agents employed are irritating to the mucous membrane lining the intestinal canal, are conducive to inflammation, and lead ultimately to stasis if long continued. In the whole materia medica there is but one drug for which any tonic effect is claimed, that drug being cascara. The many advertised medicines claimed to be curative are, therefore, misrepresented; some of them deceive. Thus, under the name Fruitola, a so-called cure for gallstones was exploited. Fruitola was examined in the laboratory of the American Medical Association in 1910. The summary of the Association's finding at that time was ". . . it is concluded that the liquid portion of Fruitola is olive oil flavored with anise while the powders accompanying the liquid are the well-known seidlitz powders." When olive oil and seidlitz powders are taken internally they form masses *resembling* gallstones. Beecham's Pills, Carter's Liver Pills, Cascarets, and the rest of the motley pill group, depend upon drugs for their effects.

Enemata for the relief of constipation are not to be encouraged. They are temporarily useful, but continued use of them is apt to be fraught with danger, inasmuch as they distend the lumen of the gut and destroy the gut's own inherent

power to act—this in spite of what “internal bath” treatments may claim.

It therefore devolves upon us, if we are to be free from the trouble, to depend less upon drugs and more upon natural methods. Nature will cure if given half a chance, and we must remember that she has no chance if we live at odds with her laws.

“Bad men live, that they may eat and drink; whereas good men eat and drink, that they may live.”—SOCRATES.

“The man with educated bowels will eclipse the man with an educated brain. However, we should have both.”—HUBBARD.

CHAPTER VII

HYPERTENSION AND ARTERIO-SCLEROSIS

"Care keeps his watch in every old man's eye,
And where care lodges, sleep will never lie."

—*Romeo and Juliet.*

THE expression, "A man is as old as he feels," has now given way to, "A man is as old as his arteries." By this is meant, that if a man of sixty, for instance, has arteries that are soft and elastic, and the pressure of the blood within them is not high, that man is physically young and his prospects of reaching a ripe old age are very good. On the other hand, if a man of thirty or forty has arteries that are stiff and inelastic, with a high blood pressure, this man's chances of attaining the threescore-year-and-ten mark are very poor.

The circulation of the blood depends upon the following factors principally: The heart is the pump which forces the blood into the arteries. The arteries, which consist chiefly of elastic tissue, expand and retract with each beat of the heart, and thus convert an intermittent stream

into a continuous one. The small arteries regulate the flow of blood to the different parts of the body, while the capillaries, or smallest arteries, form a bed which irrigates all the tissues and supplies them with nourishment. The return of blood to the heart is effected by the veins and the lymph vessels.

A knowledge of the force with which the blood circulates in the vessels is of considerable importance, as may be recognized from the fact that many insurance companies now require their medical examiners to determine the blood pressure of all applicants for policies. Any deviation from the normal is regarded with suspicion, and many a man, who looked the picture of good health to his friends, has been denied a policy simply because his blood pressure was a little in excess of what it normally should be in one of his age. The rejection, therefore, meant that the applicant was a poor risk.

To ascertain the blood pressure of an individual, physicians use a little device known as a sphygmomanometer. A rubber band is adjusted to the person's arm, and by means of air pumped through a rubber tube the blood current is shut off. The pressure of the blood within the artery is recorded on a dial, or in a graduated mercury column. If a man is told that he has a blood

pressure of 140, for instance, it means that the force of his blood current is powerful enough to raise a column of mercury 140 millimeters high. A meter is about 39.37 inches, and a millimeter is one one-thousandth of a meter.

Blood pressure varies in different persons. What is normal for one is not normal for another. Moreover, it varies under different influences, as rest, exercise, mental excitement, etc. The average blood pressure, which we may regard as the normal, is between 120 and 140 millimeters of mercury. In old persons it may vary between 140 and 160 and not be pathological. An easy way to remember what the normal pressure is, is to add 100 to the age. Thus if an individual were thirty years of age, his blood pressure should be about 130.

High blood pressure is most common in association with hardening of the arteries, or arteriosclerosis, as it is called. It may, however, be met with in individuals who give no evidence of suffering from that affection, and who show no signs of heart or kidney disease, with which high pressure is also found. High pressure, with no signs of underlying disease, is of frequent occurrence in hard workers, indulgers in tea, coffee, tobacco, and alcohol, and in those who worship at the shrine of Venus not too wisely but too well. In

some instances of this kind the pressure will reach 180.

Unfortunately, high blood pressure, or hypertension, as it is also known, is not generally productive of subjective sensations, thus filling the individual so affected with a false sense of security. Headache, slight attacks of indigestion, throbbings, and other apparently trivial discomforts may be experienced now and then, but are not regarded as being of sufficient importance as to require the services of a physician. Hypertension eventually results in arterio-sclerosis, which is a very serious malady.

Arterio-sclerosis consists in a replacement of the normal elastic tissues of the arteries by a hyaline material which, sooner or later, undergoes calcareous degeneration, rendering the vessels stiff, hard, brittle, and inelastic. Because the arteries no longer expand and retract with each beat of the heart, the heart must doubly labor in order to compensate for the pathological state of affairs. Hypertrophy of the heart follows, and evidence of this and of the laboriousness with which it works is found in its heaving impulse against the chest wall, the pulsations of the vessels in the neck, and in the booming character of the cardiac sounds. The heart cannot adapt itself to systemic conditions. The

small arteries are supplied with nerves, called vasomotor nerves, the function of which is to govern the size of the arteries. There are two main divisions, those which dilate and those which contract; or, in other words, those which increase the size of the vessel's lumen and those which decrease it. The heart also has one of these vasomotor nerves incorporated in it, known as the depressor nerve to the heart. If for any reason the work of the heart becomes too laborious, under normal conditions an impulse travels up this depressor nerve to the vasomotor center situated in the medulla oblongata. From this station impulses are sent to the nerves governing the size of the many small arteries situated in the abdominal cavity, and known as the splanchnic vessels. These vessels dilate, and thus the heart, not having so much resistance to overcome, works more easily. When arteriosclerosis exists this mechanism is no longer possible. The heart enjoys no respite, but, like a true friend, works on, until at length it breaks down. Or it may be that, under sudden strain, the vessels of the splanchnic area no longer acting as a safety valve, the pressure becomes too strong for the sclerotic vessels. Consequently one or more of these ruptures. This is a frequent happening, as illustrated by the fre-

quency of apoplexy, which is nothing more than a rupture of a cerebral blood vessel.

Arterio-sclerosis has a wide etiology. Many cases are due to overeating, particularly of meats and highly seasoned foods. Muscular overwork, and competitive athletics in particular are common causes. The pressure under which we live, and worry play a large rôle. Renal disease and cardiac disease produce it either primarily or secondarily. Gout, poisoning by lead, alcohol, or metabolic poisons are responsible for many cases. Syphilis is the most important single cause. In many cases the condition is hereditary, it not being uncommon to find whole families afflicted at an early age. Lastly, it occurs as a senile change, and occurring as such may be regarded as a physiological process.

Arterio-sclerosis may produce symptoms or not. When well developed the temporal arteries stand out prominently, are tortuous, and resemble twisted rubber pipe stems. They feel hard and cannot be wholly compressed beneath the finger. Normally an artery feels elastic, soft, and may be so compressed that pulsation cannot be detected beyond the site of the pressure. The sphygmomanometer has a high reading.

When symptoms are present they vary according to the chief site of the morbid process. Thus,

a sclerosis of the coronary arteries, which supply the heart muscle, may cause attacks of angina pectoris. The heart may dilate either suddenly, which causes sudden death, or slowly, in which case dropsy, difficult breathing, cough, indigestion, etc., arise. Sclerosis of the abdominal vessels may cause symptoms varying from what are taken as minor digestive disturbances to attacks of severe abdominal pain. Since changes take place in the kidneys as a result of the sclerosis of the vessels, evidence of them is not hard to find. The first complaint of the person may be that he has to get up very frequently during the night to pass water. Or there may be headache, dimness of vision, specks before the eyes, eczema, etc. Intermittent claudication, manifested by a muscular weakness, tingling, pain, and a sensation of anesthesia, particularly in the extremities, may be the presenting sign.

Cerebral arterio-sclerosis produces many symptoms. There may be lessened mentality, disturbance of memory, headache, vertigo, transient paralyses, etc. While not a constant accompaniment, sleep is often disturbed. The reason for this is that the cerebral vessels, no longer able to contract and retract, are more governed by the effects of gravity than by nerve influences. When the person lies down the brain becomes

congested, and, as we have learned, this is not conducive to sleep. During the day the individual may be drowsy, because the blood sinks to the extremities. The drowsiness in the daytime and the inability to sleep at night, so often found in the aged, may be explained by a somewhat similar reason—namely, that because of heart weakness, which is physiological with senility, the blood is not easily sent through the brain in the upright posture. Once the recumbent position is assumed posture fills the cerebral vessels. Other factors, of course, play rôles, but there is no doubt that gravity has much to do with it.

Hardening of the arteries is serious, for many reasons. As a result of it aneurism of the heart, degeneration of the heart, plugging of the vessels supplying the heart, gangrene of the extremities, apoplexy, paralyses, etc., may occur.

Once sclerosis of the vessels becomes well established the pathological condition is irremovable. A consideration of the causes which produce it should convince us that, apart from hereditary influences, they are all within our control. It is true that gout often occurs in individuals who have led lives quite in accord with right living, and who are suffering because of the sins of their high-lived ancestors. But the majority of its sufferers deserve no pity, for they

alone are responsible for their state. For a very good article on gout the reader is referred to Benjamin Franklin's "Dialogues between Franklin and the Gout." It may be mentioned, in passing, that in its parting advice Gout says to Franklin: "My object is your good, and you should be sensible that I am your real friend."

True old age rarely has a chance to produce arterio-sclerosis. Most of us are prematurely senile; at seventy, or sixty even, our arteries are corrugated and hard, and because of this we exhibit all the symptoms and signs of age that mark the man of fourscore years and ten, or even the centenarian. Methuselahs no longer exist; the average length of life is becoming shorter and shorter year by year, but that this is so we alone are responsible, for most of the diseases from which men die so early are preventable.

Most of us wish to live to old age and to be active in it. When a man does attain a length of years beyond the average he is asked to give the secret for his longevity. These secrets, so-called, are at times valuable, often inane. For instance, one man will say that he owes his long life to a vegetarian existence, another to avoidance of alcohol, and still another to going barefooted. There is no definite rule which will guarantee us a long life. Certain of us

are doomed to early graves by reason of a poor inheritance, while others of us are swept away by accident or pestilence. However, there is no one, no matter how unsound he may appear to be in body, who may not be improved, and given only a fair physical framework there is no reason why we should not live to a comparatively good old age.

Certain substances we know to be distinctly opposed to the achievement of longevity. Among these is alcohol. To my mind there is no better temperance sermon than that found in *As You Like It*, II, 3. Adam, a fourscore-year-old servant, speaks as follows:

"Let me be your servant:
Though I look old, yet I am strong and lusty;
For in my youth I never did apply
Hot and rebellious liquors in my blood;
Nor did not with unbashful forehead woo
The means of weakness and debility;
Therefore my age is as a lusty winter,
Frosty, but kindly. Let me go with you."

We have, of course, numerous examples of apparently hardy old men who claim that they have partaken of strong liquors all their lives. We must remember, however, that we are not all possessed of the same make-up, that what does not seem to harm one will kill another. For in-

stance, the death rate among artificially fed infants is appalling. The worst of all artificial foods, probably, is condensed milk. Take a group of ten new-born infants and place them on a diet of ordinary condensed milk and it is safe to say that many will die within a very short time, providing the diet remains unchanged. Yet now and then, we find an infant who thrives on any kind of food, no matter how unsuitable it may appear to be. This is a clinical fact which most pediatricians will attest. Just as condensed milk is unsuitable for the vast majority of infants—to use a homely example—so is alcohol unsuited for the vast majority of adults. Alcohol is not properly a food but a narcotic, habit-forming poison. Many patent nostrums are particularly rich in their alcohol content, but the effects of alcohol are the same whether taken across the bar of the saloon or that of the drug store.

The investigations of Cabot and others have thrown some doubt upon the ability of alcohol to cause arterio-sclerosis, but we do know positively that it weakens every organ of the body, and unquestionably shortens life. Being detrimental to the human economy, he who is solicitous for his body's welfare should eschew it. It is all very well to tirade on its ill effects, but find-

ing individuals who have the courage of their convictions and who give it up is another matter. Once the alcohol appetite is formed it is very difficult to starve out. Advertised nostrum cures there are many, most of which, if not fraudulent, are sold under false and dangerous pretenses. A strong will power is the only requisite for the eradication of the habit.

Tobacco is another substance which has a tendency to shorten life. On the subject of tobacco smoking much has been written, much of which is untrue. While the most rabid denunciators of tobacco deal leniently with the cigar or pipe smoker, they are quite vehement in their hatred of the user of the cigarette. The most scathing arraignment of the cigarette smoker that I have ever read is contained in a little booklet called "The Cigaretist," written in a biased manner, but which will appeal to haters of the weed, even though it has no scientific support.

The poison contained in tobacco is principally nicotine, named after Jean Nicot, who introduced it in the form of snuff to the court of Catherine de Medici, in the sixteenth century. Besides nicotine, tobacco contains many other harmful substances; nicotianin, which gives it its flavor; and pyridin, marsh gas, ammonia, hydro-

cyanic acid, coal gas, carbolic acid, furfural, etc., on burning. Smokers' sore throat is due to pharyngeal irritation produced by these substances. In the cheaper grades of tobacco they are present to a very noticeable degree.

The percentage of nicotine varies, according to the kind of tobacco used. The "London Lancet," in 1912, stated that cigarette smoke contains from 3.75 to 84 per cent., pipe mixture smoke, used as a cigarette, 79 per cent., pipe smoke, 77 to 92 per cent., and cigar smoke, 31 to 63 per cent. Thus, it will be seen that the cigarette is less toxic, as concerns the nicotine effect, than is either the pipe or the cigar. Nicotine is a very powerful narcotic poison, closely allied to prussic acid in its action. One drop on the unbroken skin of a rabbit will cause instant death.

Much of the abuse heaped upon the cigarette is not deserved. There is no doubt that its use stunts the growth of the youth and destroys his nervous and mental organization, but this effect would be more striking if a cigar or pipe were used. In adults its evils are usually few.

There are, of course, many brands of tobacco, and their potency for evil varies accordingly. The higher grades of Havana cigars, for instance, contain less nicotine than the cheaper

grades in which there may be enough nicotine to kill two men. While cigarette smoking causes an increase in the rapidity of the heart's action and raises the blood pressure, cigar smoking does both to a greater degree. The consensus of opinion, however, is against the cigarette, and it must be admitted that the impartial tests conducted by unbiased observers have demonstrated that cigarette smoking is slightly more harmful than either pipe or cigar smoking.

That smoking has much pleasure no user of Lady Nicotine will deny, but the non-user is apt to say, with James I, that it is "a custom loathsome to the eye, hateful to the nose, harmful to the brain, dangerous to the lungs, and the black stinking fumes thereof nearest resembling the horrible Stygian smoke of the pit that is bottomless."

Many smokers are troubled with what is known as smokers' heart, a condition of irregularity of cardiac action, often accompanied by twinges of pain in the heart area. While not serious in itself, it must not be forgotten that sudden death has occurred from it. The condition will never improve until the tobacco habit has been conquered, and even then, if the habit has been of long duration, normal heart action may not be regained.

High blood pressure, which smoking causes, is no doubt due to nicotine's stimulation of the adrenal glands. These glands are situated above the kidneys and supply to the blood stream a substance which accelerates heart action and raises blood pressure by contracting the small arteries. Excessive smoking also weakens the lungs, prevents proper absorption of oxygen, diminishes mental efficiency, and lethargizes the body. In susceptible individuals it may produce what is known as tobacco amblyopia, characterized by a gradual dimness of vision and foggy vision. The sufferer sees better in the evening and the visual disturbance is more marked in bright light. The stronger tobaccos used in pipes and cigars are most often responsible. Smoking when the stomach is empty, as well as impairment of the general health, predisposes to the complaint. If the tobacco be stopped, vision gradually improves, though in severe cases there may be a permanent diminution in the acuity of vision.

Excessive tobacco users are often troubled by catarrh of the mouth, throat, and nose, irritations of the eyes, laryngitis, insomnia, acid dyspepsia, irritability, and restlessness. Tobacco does not increase the capacity for mental work, as is commonly imagined. The only reason why

smokers do better work than when deprived of their customary pleasure is because the nicotine acts on them as a stimulant. It is comparable to the taking of morphine by its habitu  . When the habit has been removed, the work done is apt to exceed in efficiency that done while under tobacco's influence.

Quite recently it was claimed that frequent washing of the mouth with a two-per-cent. solution of silver nitrate would destroy the tobacco habit. It may aid, but if the individual has not will power it is ineffectual. Many persons claim that it is impossible for them to forswear smoking, but this is not so. If they try hard enough they are bound to succeed. Nothing is to be gained by sudden cessation of the drug, for such it is. To my mind the best way to "cut out" smoking is to convince yourself that tobacco is harmful; read all the literature on its effects that you can procure, and whenever you feel yourself giving up read the most scathing of them again; keep the mouth clean; obtain an abundance of fresh air, practice deep breathing. If you are accustomed to smoke before and after each meal, for the first week omit smoking before meals, and when you have weaned yourself away from this omit smoking after meals. Considerable will power is necessary. Benefit cannot be

expected early because it takes about three weeks for the nicotine to be eliminated from the system. Moreover, headache and irritability are apt to trouble the individual. It is also noted that smokers, on cessation of the habit, often become constipated. This need not alarm one, however, for when the system becomes accustomed to the new state of affairs it will right itself of its own accord.

Some years ago Metchnikoff startled the world by claiming for sour milk the secret of longevity. We know that normally the large bowel contains a large amount of putrefactive bacteria, and it was supposed that the toxins generated by these lessened the years of life. When the number of bacteria in the intestinal canal become much above the normal number, toxins are developed which, in truth, do damage the individual; but the only persons who claim that these toxins are developing in everyone are certain manufacturers of lactic acid bacilli and other products which are said to be opposed to the intestinal bacteria.

When one eats excessively of protein food the unused portion becomes the prey of putrefactive organisms. Poisonous substances are thereby formed, absorption of which produces symptoms of disease. This protein poisoning is best con-

quered by diminishing the intake of protein, but may also be modified by the drinking of sour milk, which contains lactic acid, in which putrefactive organisms do not thrive. If sour milk or tablets containing lactic acid bacilli are employed, milk, lactose, or starch should be added to the dietary. This is because of the fact that the germs contained in the sour milk and the tablets are destroyed, if not given food such as they require. And the food they live on is food of a carbohydrate nature. Milk, milk sugar, starch, cereals, supply this food. In connection with protein poisoning it may be well to state that eggs are poisonous to some individuals.

The only way to avoid arterio-sclerosis—to reach old age, in other words—is to practice moderation in all things. The formula of Cardinal Gibbons, which, to repeat, is regularity of life, moderation in eating and drinking, exercise, avoidance of worry, and an ever-abiding trust in God's providence, can easily be followed by all.

In certain parts of Italy, and in China, I believe, it is the custom of the people to pay the doctor a certain amount each year in return for which they receive a year's medical attention. Because of this, no matter how trivial the ailment may seem to be, the doctor is consulted. Though

such a practice does not exist in our own country, we can approach it by visiting our physician at least twice a year, whether sick or well. Take any group of persons who look to be, and who think themselves to be, in perfect health, and examination will reveal that about one-half of them suffer from a detectable disorder, which may at present be minor and cause no inconvenience, but which in time will develop into an irremovable, or with difficulty removed, malady. "A stitch in time saves nine," and just as mighty wars have small beginnings, so do minor complaints magnify themselves. If parents are not convinced of the necessity of frequent physical examinations of their own persons, they should, at least, recognize its importance to the growing child. Many so-called backward children are suffering from ocular, nasal, teeth, or throat disease; conditions readily cured if detected early, but with difficulty if the morbid states are allowed to progress for any length of time.

A person with arterio-sclerosis should not be discouraged. His chances of a long life, while not the best, are still good enough to warrant his obeying all the laws of right living which he should have heeded years before. It is not yet time for him to say, "Let us eat, drink, and be

merry, for tomorrow we die." It is perfectly possible for a person with moderately advanced arterio-sclerosis to live ten, twenty, or more years, providing he lives right and is under medical care.

The treatment of the disease when developed belongs to the physician. There are, of course, a number of measures that the sufferer may utilize in improving his state. For instance, the amount of food eaten should be cut down—four small meals being better than three large ones. The diet should be mostly vegetarian, the food well chewed, and the bowels well kept open, by saline cathartics, if absolutely necessary. Water, in small amounts, is by no means contraindicated; the sufferer may partake liberally of alkaline mineral waters, to promote the kidney function. A daily hot bath is serviceable. Exposure to wet or cold, and also cold baths are harmful. Alcohol should not be used, though if the individual has been a steady drinker small amounts of white wine or gin may be allowed, never beer or the sparkling liquors. Tobacco should also be diminished in amount. Residence in mild climates, such as that of Lower California, is valuable. Cases in which worry cannot be eliminated are practically hopeless. Exercise should be mild. The clothing should

be such as will favor the excretions of the skin; flannels in winter, medium-grade underclothes in summer.

As the general condition improves and the blood pressure becomes lowered, the insomnia will disappear. Lying with the head high may help sleep. Old people whose circulatory apparatus is feeble will often find sleep by drinking some hot, mildly stimulating drink, such as beef tea, before bedtime.

There are many drugs which will lower the blood pressure, and thereby produce sleep, when the sleeplessness is due solely to high blood pressure. They are safe only when intelligently employed, and had best be used only under the direction of a physician.

"To abstain, that we may enjoy, is the epicurianism of reason."

—ROUSSEAU.

CHAPTER VIII

EYE DEFECTS

“What a curious workmanship, is that of the eye, set in the body, as the sun in the world; set in the head, as in a watch-tower, having the softest nerves for receiving the greater multitude of spirits necessary for the act of vision.”—CHARNOCK.

MIGHTY oaks from little acorns grow; so also do mighty diseases develop from comparatively insignificant sources. And just as it takes years for the oak to mature, so also does it often take years for a disturbance in the human system to manifest itself in a manner appreciable to the sufferer. In this respect nature is too indulgent; she permits herself to be abused unreasonably for a long time without betraying any sign of indignation, yet, sooner or later, her patience is bound to be exhausted, and then, as if mindful of all past offenses, she bursts out in a revolution that is not easily quelled.

It is the little things in life that count, and it is also the little defects of the body that are productive of severe and serious consequences. This fact we too frequently forget or overlook. Moreover, if we suffer from a comparatively

grave disease, and are told by the physician that it depends upon a slight perversion in some other part of the body, we are inclined to scoff, matching our slight knowledge of medicine, learned probably from newspapers or "patent medicine" pamphlets, with the knowledge he has obtained only after years of study and at an outlay of thousands of dollars.

Eye defects afford a good example of the great harm apparently trivial impairments may produce on the body in general, and on the nervous system in particular. While we have for a long time appreciated the influence of eyestrain, or refractive errors in the causation of headache, vertigo, eye pain, eczema about the eyes, etc., and have attributed some of the breakdowns which occur in middle life as being due to these causes, very few of us have even thought of such conditions as being responsible in the production of marked neuroses, among which insomnia holds an important place. How a slight refractive error, of which the individual is wholly unconscious, and unaccompanied by symptoms directly referable to the eye, could so impair the nervous system as to completely disorganize it, we do not thoroughly understand. Some of us perhaps may ridicule the idea as being purely theoretical; yet when the theory, if such it is, is borne out by

a number of experiments, we must cast aside the element of doubt and give vent to a credo.

In an article entitled "Insomnia and Suicide," which was published in the "London Lancet," an authoritative medical journal, Dr. C. Ernest Pronger, a Fellow of the Royal College of Surgeons, and an eminent English eye specialist, sets forth his views in this regard. He was prompted to write his paper because at a meeting of the British Medical Association, in which eminent specialists in neurology discussed the subject of insomnia, not one mentioned errors of refraction as a possible cause; whereas, after an experience of twenty years, he is firmly convinced that all cases of insomnia have as an underlying cause an error of refraction, easily remediable by its careful and skillful correction, which means solely the wearing of glasses.

To quote from Dr. Pronger: "For more than twenty years my attention has been especially devoted to the consideration of the influence that slight refractive errors have in causing many of the functional nerve troubles so prevalent in these days. Among these insomnia has naturally had a prominent place. In my student days we were taught that slight errors of refraction, anything below one diopter (the unit of refracting power of lenses), were of no consequence, and

might be ignored. From a purely visual point of view this was true, but as time went on it was observed that these slight errors, although not causing any visual defect, are of great importance, in that they give rise to sundry neuroses.

“For a long time, and even now, the view that the correction of slight refractive errors might be a cure for many functional nerve troubles has been scoffed at and ridiculed, but undoubtedly a change is taking place in this respect.

“Especially should these slight degrees never be ignored in any case of insomnia, and I think it will be found that some error is nearly always present in those cases not associated with organic disease, such as tumor, kidney troubles, and the like, or with persistent pain from any cause. Insomnia is not usually the only symptom, but is generally associated with attacks of great depression, and often with giddiness or headaches.”

To quote from his article a few illustrations of what can be done for the relief of insomnia, and also the difficulties to be overcome in persuading the patient as to the benefit of glasses, especially if an oculist has already been consulted:

“The writer of the following letter was with difficulty persuaded by her doctor to consult me,

for she could not believe that her eyes were responsible for the insomnia from which she had been so long a sufferer, as she had seen an oculist, and her glasses were quite satisfactory, so far as she knew, and she could see quite well with them.

“Fortunately for her, the doctor insisted, and she came. I modified her reading glasses, and ordered some for constant use. Three months later she wrote: ‘I am sleeping wonderfully better since you saw me in May.’

“The following was a case of very long standing, but I never despair of relieving any case of insomnia if the patient will carry out my instructions to the letter. He writes:

“‘When you stated so confidently that you could cure my insomnia and depression I could not believe it, for I had suffered from these attacks for more than twenty years. They came on at intervals, and lasted for several weeks, and had increased in severity in recent years. While they lasted I felt incapable of transacting any business satisfactorily, and life did not seem worth living. Since adopting your remedy I have been perfectly free from any symptoms of this trouble.’

“A clergyman had suffered for nearly two years from spells of insomnia, accompanied by

frequent attacks of palpitation, and a great feeling of 'nervousness.' The doctor who sent him to me diagnosed these conditions as due to eye-strain, which proved to be the case, although he would have passed the visual tests as 'practically normal.' He reported subsequently:

" 'The effects of the glasses have been decidedly good. (1) The palpitation has passed away. (2) The nerves are quieter, and normal sleep has returned. You have a most grateful patient, I assure you.' "

If we all had the opportunity of reading Dr. Pronger's article, which is entirely too long for reproduction here, we would not long remain unconvinced of the great rôle refractive errors play in the etiology of insomnia. If we are to form conclusions from the cases he records, then the panacea has been found. Very dogmatically he states that an eye defect is the root of all insomnia, and while admitting the action of such exciting causes as influenza, shock, worry, etc., he claims that these by themselves would not be so harmful if it were not for the fact that the nervous system had long been taxed by the strain induced by refractive errors.

We should not forget, however, that it is the failing of a specialist to attribute all diseases as proceeding from the organs in which he special-

izes. For example, a dentist is apt to regard the teeth as being responsible for most of the diseases to which flesh is heir; a surgeon is apt to view surgery as the sole method of cure. However, pending the corroboration of Dr. Pronger's findings, it behooves us to accept his explanation of insomnia, inasmuch as the remedy is simple and within the reach of everyone.

How is one to know if an error of refraction is responsible for his insomnia? Simply by consulting an experienced, careful, skillful ophthalmologist. By this is meant a doctor who has not only made a special study of the eye, but who has also devoted at least four years of his life to a study of the physiology and pathology of the body in general. Very many disturbances of the eye are not dependent upon the eye, *per se*. For instance, kidney disease, arterial disease, constipation, poisoning by alcohol, tobacco, may produce defective vision. The optician, whose offers of free eye examinations we see in the daily papers, has, as a rule, devoted but a short time to the study of the eye, principally to its mechanics. He may make mistakes, and probably serious ones, though it must be acknowledged that, as a class, opticians are honest in their business dealings. It is said that the advertising opticians prescribe glasses whether they are needed

or not; be this truth or fiction, the optician who can also sign M.D. after his name is not, as a rule, interested in the sale of glasses. He gets his examination fee anyway, and is content with that.

It may be well to warn the reader as to the use of certain proprietary eye remedies. Some of these are, or have been, advertised in a misleading, dangerous manner. For example some of the so-called eye lotions or remedies in their advertisements have stated that there are many people wearing glasses who have no need of them, implying that the nostrums' use would demonstrate that claim. It is, no doubt, true that some people wear glasses for "style." Many of the advertised eye nostrums depend essentially upon common borax for whatever therapeutic value they may possess. The actual cost of a gallon of a saturated solution of such borax is about ten cents. Moreover, sufferers from eye diseases such as trachoma and glaucoma may, influenced by their advertisements, use the nostrums for a long time, in the hope of getting well, to learn, too late, that delay in consulting the ophthalmologist has cost them their eyesight. Again, one is unpardonably ignorant if he allows himself to think that he can diagnose his own case from "patent medicine" books, written probably by a

man who has never spent a day in a medical college, and whose knowledge of disease is mostly plagiaristic.

Reference has been made to glaucoma. While it is, no doubt, amiss to discuss it here, inasmuch as in the etiology of insomnia it plays little or no part, still its comparatively great frequency and the ignorance of the public in general as to its symptomatology and seriousness may justify such a discussion. Again, it is stated that it may be caused by insomnia.

There are in this country approximately 100,000 blind. At least one-quarter of this blindness was preventable. About twenty-five per cent. of the inmates of institutions for the blind are blind because of a disease known as ophthalmia neonatorum, due to a virulent microorganism which infects the new-born at or shortly after birth. The instillation into each eye of the new-born babe of one or two drops of a two per cent. solution of silver nitrate prevents this most serious disease. Other causes of blindness are neglect of eye hygiene, accident, disease originating in the eyes or secondary to disease in some other part of the body, etc. Of these diseases glaucoma probably heads the list; at least the majority of the blindness one meets with in hospitals is due to this disease. Though the disease is not al-

ways preventable, the blindness resulting from its neglect is.

Glaucoma is a disease of advanced life, occurring generally between fifty and seventy years. Its exact cause is unknown, although it is generally believed that the emotions, worry, insomnia, overuse of the eyes, influenza, gout, heart disease, kidney disease, etc., play parts in its etiology. Its main sign is an increase in intraocular tension. There are several varieties of glaucoma, the most common form being spoken of as chronic inflammatory glaucoma.

The initial signs of the disease are diminution in vision, foggy vision. A ring of rainbow tints is seen around lights. Sometimes there is pain in the eye or head; but this is, as a rule, slight or absent altogether. Some conjunctivitis, or corneal injection may be present. All these signs may disappear for years, but they surely reappear. The disease is insidiously progressive, does not cause the sufferer any great alarm, and may be dismissed from mind as being of no importance. Glaucoma allowed to progress results in degeneration of the eyeball, consequently blindness.

A person of fairly advanced years who finds vision becoming defective, who requires frequent changes of glasses, who sees rings around lights,

should not delay in consulting an eye specialist. Eyewashes and glasses lull the sufferer into a false sense of security. The eye is a most valuable possession, but like many another thing of value it is not fully appreciated until its sight is gone.

As a person may be suffering from serious disease of the eye and be unaware of it, so also may he see perfectly well and still suffer from a refractive error. Since the schools have had medical examiners it has been found that many children who were regarded as backward—even feeble-minded—who did not care to study or who fell asleep over their books, who were restless at night, or who suffered from chorea, headaches, enuresis, were suffering primarily from defective vision. Proper eyeglasses transformed them into healthy children. Many adults, too, who are victims of ill-defined disorders which, for lack of a better term, we may call “nervousness,” are suffering because of a refractive error which needs correction. Their sight may appear good to them, yet, if the eyes were examined, it might be found that while the eye test was practically normal, still there was a slight defect which is often, but should not be, disregarded. Again, a great many individuals are sufferers from defective vision in one eye, the other being normal.

Strain is thereby placed on the good eye, which is harassing to the nervous system and which leads to its instability.

Too much stress cannot be laid on the admonition that the glasses prescribed must be prescribed with great care. There are, indeed, a great many persons wearing glasses that are not suited to their individual cases. This may result from imperfect examination, ill fitting of the lenses, wearing the glasses improperly, or wearing them for a time longer than they were intended. Just as one should make frequent trips to his family doctor or dentist, so also should he, particularly if he wears glasses, call occasionally on his eye doctor. Even if a person has seen an eye specialist, or is already wearing glasses, and still suffers from insomnia, he should not hastily conclude that glasses are impotent for his case. If the glasses are improper a cure cannot be expected. In one of Dr. Pronger's cases, a lady who had for years suffered from insomnia, and who had sought advice from six of the most prominent eye specialists in Belfast, Dublin, and London, was not cured until she had received glasses for reading and for distance that were suitable to her case.

If one wears glasses it is necessary that he wear them religiously. To wear them for read-

ing only is not sufficient; they must be worn constantly, and it may be necessary that there be different glasses for reading and for other times. And again, one should not expect a quick cure. If the insomnia is dependent upon an error of refraction, if corrected by glasses and one follows out carefully all the instructions given him, he should begin to improve in a short time, but improvement may be gradual and not very marked. A sufficient time should be allowed to either prove or disprove the efficacy of the glasses. The insomnia represents years of strain; the nervous system must be given time to recuperate.

Doubtless some of us will wonder how it is, that if eye defects are so numerous, all sufferers from refractive errors do not suffer from insomnia or allied neuroses. Some of these individuals go through life probably unaffected by the impairment. However, while we all have the same gross make-up, we all do not react alike. It would appear that in each and every one of us there is an organ, or organs, weaker than the rest. Thus one person, on the slightest provocation, be it from external or internal influences, is afflicted by a skin disorder; another has a stomach that is easily disturbed; another a weak nervous system. The weaker organ is therefore

easily influenced by the perversions of the others. In this connection it may be well to note the fact that all diseases do not manifest themselves in the regions in which they are actually located. Some disorders give rise to symptoms in other parts which lead one to believe that those parts are solely at fault. Thus a chronically inflamed appendix may cause no pain or other sensation in the appendicial region, but reflexly cause symptoms very much like those of gastric ulcer; gallstones may cause a fermentative indigestion; diseased teeth or tonsils may be the cause of painful feet, etc.

Of late years nervous troubles, in which is included insomnia, have superseded all others. Why? Dr. Pronger explains it as follows:

“Before closing this paper, may I venture on just one suggestion as to the great prevalence of functional nerve troubles and the cause thereof? I have often heard two special causes mentioned, ‘the strenuous life of the present day’ and ‘the influence of heredity.’ With both of these I cordially agree, if I may supplement them thus: ‘The influence of the strenuous life upon those whose nervous systems have already been considerably taxed by the presence of refractive error.’

“Do we not see many men leading the most

strenuous lives possible and yet whose nervous systems never falter, and, on the other hand, those whose nerves are shattered but whose lives have been anything but strenuous? As to heredity, its influence is shown, in that the initial cause of the neuroses—refractive error—in one generation is so frequently transmitted, and gives rise to similar neuroses in the next. Do we not have instances of two brothers, or two sisters—the one with a normal, evenly balanced nervous system and normal refraction, the other with inherited refractive error and the highly strung neurotic temperament?

“It is my firm conviction that it is from the more general recognition, both by physicians and ophthalmic surgeons, of what I have indicated as the initial or predisposing cause, and the earlier and more effectual treatment of it, that we must hope for a diminution of this appalling number of suicides, and that relief and happiness may be brought to that vast number who, victims of insomnia and neurasthenia, or ‘nervous breakdown,’ are dragging along a miserable existence.”

It is from the experiences of other men that we learn. Of course, their experiences must be proved by others before they can be accepted as fact. Dr. Pronger is, no doubt, sincere in his be-

lief that eye defects play so great a rôle in the causation of the neuroses, but we cannot agree that practically all of them are due to this one cause. That some, or even many cases of insomnia are due to eye defects everyone will agree. Nevertheless, while his findings must be discounted somewhat, they are not to be treated trivially by any means, particularly by the insomniac. The latter may do so, but at his own peril. It, of course, fills some of us with shame to be told that such a seemingly insignificant impairment is the cause of our giant troubles. If the insomnia were ascribed to some disease with a high-sounding, almost unpronounceable, yet aristocratic name, we might go away from the doctor's office, clutching our prescription, in a happy frame of mind.

"Seek and ye shall find," says the Bible. Hope is the fabric which clothes humankind. Rob man of hope, and misery, sorrow, is left. There is hope, no matter how serious or hopeless a person's condition may appear. Yoke Hope to Search, hitch them to Perseverance, and they'll carry the sufferer to Cure. Hope we possess and constantly nourish. Perseverance, if not a possession, may be acquired. But where is Cure to be found? Will the sufferer hasten to London, to consult the famous eye specialist he has

been reading about? Possibly. If he can afford it all well and good; the ocean voyage, the sea air, the change of scene, will help him. But of this there is no need. It is a failing many of us have, rushing off to Dr. So-and-So, who lives in a distant city, because we have read his magazine or newspaper articles, or have heard of him in some other way. Do not sigh, if your child has a congenitally dislocated hip, that, like Armour, if you could afford it, you would send across the waters for Dr. Lorenz. American surgeons can do as well. "Why did you come all the way here?" asked a doctor of a patient who had traveled far to consult him. "You have many doctors as good as I in your own city." This is true of eye specialists; every fairly large city has competent doctors who should be consulted first. If they fail, which is a remote possibility, then those in other cities may be consulted.

Wearing glasses is not such a hardship. It is by far to be preferred to sleepless nights. Their cost is trivial; the good they may do incalculable. When glasses are necessary nothing else can take their place. Procrastination is not only the thief of time but of good intentions.

Even though one wears glasses, or has no need of them, eye hygiene should not be disregarded. Yet the eye, the most delicate and sensitive of all

our organs, is constantly being sinned against, through ignorance or intent. Reading in the sun or in bright light, in the glare of an open light, are common offenses against eye hygiene. Reading on moving trains, the street cars, or moving vehicles of any kind causes the book to shake, and thus the eye, in an attempt to follow the printed page, is strained. When one reads by lamplight, or gaslight, either the light should be protected or an eyeshade worn. One should not read facing a light, but with his back to it so that the rays of light fall over the shoulder. Reading while lying down contributes to eyestrain. Reading for hours, by artificial light particularly, and especially in a vitiated atmosphere, is also harmful.

As a cause of eyestrain motion pictures deserve consideration. Motion picture theaters not only undermine their patrons' health when improperly ventilated, the noxious odors being masked by sprayed perfume, but also when they employ unskilled or careless machine operators. Reels run off rapidly so as to refill the house, machines equipped with poor lenses, poor screens, dim lighting of the pictures, are very conducive to eyestrain. These are matters which may not be in our power to correct; still we should patronize the better theaters inasmuch

as it is the policy of the better class of motion picture theaters not only to cater to their patrons' comfort and the preservation of their health by proper theater hygiene, but to show pictures that will neither offend the eye nor the soul.

Prolonged attendance or frequent attendance at motion picture entertainments may cause eye-strain, particularly in those whose eyes are sensitive. Many individuals suffer from headache or other discomforts as after effects. This is an indication that glasses are necessary. Even discomfort may not then be entirely obviated. The wearing of colored glasses will usually bring relief. Under no circumstances should one sit nearer than twenty feet of the curtain. A place should be chosen where it is not necessary to look upward, as this may cause headache.

"The eye is continually influenced by what it cannot detect; nay, it is not going too far to say that it is most influenced by what it detects least. Let the painter define, if he can, the variations of lines on which depends the change of expression in the human countenance."—RUSKIN.

CHAPTER IX

DISEASES OF THE TEETH AND GUMS

“Such a pearly row of teeth that sovereignty would have pawned her jewels for them.”—STERNE.

IN the etiology of insomnia diseased teeth and gums play no great part, yet sufficient to justify some consideration. Quite a number of individuals who had suffered from sleeplessness for years, and who had practically given up hope of cure, have found their trouble due to abscesses at the roots of the teeth, unproductive of pain or other discomfort directly referable to the teeth. Removal of the diseased teeth sufficed to bring about a permanent cure of the insomnia. It is particularly in cases where the teeth are to all external appearances healthy, and especially where defects of the teeth have been remedied by crowns, etc., that the possibility of this part of the body having a relation to the insomnia should be borne in mind.

Diseased teeth and gums may produce insomnia in many ways. Of course we all realize that it is quite impossible to sleep or to do much

else when bothered by a toothache, but here the individual knows the reason for his sleeplessness. But in the majority of cases in which the insomnia is dependent upon oral disease there are no subjective sensations which would lead the person to believe that attention to oral defects would remedy his state. Dental decay is practically always due to infection by microorganisms. These, with the toxins they elaborate, may be swallowed, thus giving rise to indigestion and various other gastro-intestinal disorders which defeat sleep. Or they may be absorbed into the blood and lymph streams, causing cold extremities, muscle soreness, worry, etc. Again, the diseased teeth may directly irritate the nerves supplying them, and reflexly, like eye defects, disturb the nervous system of themselves and not through the intermediation of circulating toxins.

It is of only comparatively recent years that the mouth as a source of systemic disease has received serious attention. Studies have shown that the mouth is the harborer of enormous numbers of microorganisms of various forms—bacteria, molds, and yeasts. Many of these are harmless, but others, by initiating putrefactive processes, or by assuming virulency under conditions favorable for their further ingression into the body, may not only cause local disease of the

mouth, but severe systemic disease as well. Individuals apparently well may be carriers of diphtheria bacilli, the bacilli causing influenza, streptococci, staphylococci and various other pathogenic microorganisms. The bacillus of tuberculosis may be present in the mouths of those who care for uncleanly consumptives. The organism causing pneumonia can be demonstrated in the mouths of a large number of healthy individuals, various observers giving from eighty to ninety per cent. of positive results. That these persons may be a source of danger to others, especially those who harbor diphtheria germs, is certain; but that they are a constant source of danger to themselves is much more true. In the case of influenza, tuberculosis, pneumonia, the germs causing these diseases may lie in a semi-dormant condition for a long time. While the individual maintains an orderly existence the defensive powers of his body are able to withstand any assaults these organisms may institute; but let him become debilitated by a drinking bout, exposure to inclemencies of the weather, etc., and the possibilities of disease resulting, often fatal in type, are very great. Apart from this, the constant swallowing of the germs and their poisonous products with food, drink, or saliva may cause systemic disease. Under nor-

mal conditions the acid of the gastric juice possesses germicidal properties; but when, for any reason, the stomach is diseased, the swallowed germs may pass alive into the intestine. Here they may set up an inflammation, or enter the gallbladder, causing an inflammation of this part and predisposing the individual to gallstones. The quality of the bile may be so changed that it can no longer enhance the efficacy of the pancreatic and intestinal juices, thus giving rise to what is known as intestinal indigestion. It is not improbable that these swallowed germs sometimes cause appendicitis and pancreatitis.

The organisms which produce gum and tooth disease are varied. One that is almost always found in association with such conditions is the *endameba buccalis*. This belongs to the protozoa, unicellular, animal organisms of a primitive type, the largest of them being about five times the diameter of a red blood cell. Endamebae have been known to inhabit the mouth for over fifty years, but their disease-producing powers were not recognized until a few years ago. Other cases of mouth disease are due to organisms belonging to the plant parasite family—streptococci, staphylococci, etc.

Two forms of mouth disease are usually

spoken of, caries and pyorrhea alveolaris, the latter being also known as Riggs' disease.

Caries, or dental decay, is to a great extent a chemical process. Films of mucin derived from the saliva cover the teeth surfaces, inclosing food particles. This food undergoes fermentation; lactic acid is formed which destroys the lime salts of the teeth. The organic matter left in the teeth becomes infected by bacteria. A cavity is formed in which the bacteria flourish. These may travel up the root canal, thus forming abscesses at the root tips, causing neuralgia, destruction of contiguous parts; or the absorption of the bacteria and their waste products, either by swallowing or by way of the root canals, may produce systemic disease.

Pyorrhea is an infection of the gums primarily. For infection of the gums to take place, it is generally necessary that they be damaged in some way. Wounding the gums by a tooth-pick; injudicious use of the toothbrush or a faulty brush; injury due to the lodgment between the teeth of hard food particles which cause a pressure destruction of the gums; general diseases, such as scurvy, malnutrition, which lower the resistance of the parts, etc., favor infection. In the earlier stages of the disease the individual may note no other abnormal condi-

tion than that brushing the teeth causes the gums to bleed easily. The organisms burrow deeply, destroying the membranes which attach the root of the tooth to the socket. Pus pockets are formed about the root of the tooth which becomes loosened. In chewing, the bacteria and their products are forced into the circulation; they are also swallowed. When pyorrhea is well developed there is much soreness of the gums which bleed readily, sensitiveness of the teeth and gums, gum boils, exudation of pus from the gums, fetor oris and other well-marked symptoms. Pus appearing at the free margins of the gums is sometimes due to lime deposits, the removal of which suffices to effect a cure. Pyorrhea is estimated as being present in forty per cent. of all individuals, and is responsible for more loss of teeth than any other cause.

It was at one time believed that the systemic manifestations of diseased oral states were due entirely to the absorption of the toxins produced by the bacteria in their life processes. It is now well recognized that not only do the toxins circulate in the blood and lymph streams, but the bacteria, live and dead, as well. In the blood stream they cause destruction of the blood cells, thus causing anemia, pallor, coldness, weakness, etc. Very profound conditions of blood im-

poverishment have been caused by oral disease. Getting into the outside tissues, the bacteria may give rise to an acute or a chronic inflammation. In a joint they may cause an acute articular rheumatism, or by clogging up the small blood vessels of the part cause an enlargement of the joint with deformity, a condition known as arthritis deformans. Lodging in the muscles, they cause pain, soreness, stiffness, and other disturbances diagnosed as "rheumatism." The "growing pains" of children are most often due to the absorption of poisons from diseased gums, teeth, tonsils, adenoids.

There is scarcely a disease that oral infections have not caused. Heart disease, kidney disease, pleurisy, indigestion, painful feet, myalgia, and innumerable other troubles have been cured or relieved by remedying pathological states of the mouth. The migration of the bacteria from the teeth and gums to other parts of the body where they set up an acute or a chronic inflammation is spoken of as "focal infection." Unless the "focus" be removed—that is, unless the origin of these secondary diseases be treated—it will serve as a constant source of danger.

It is with the nervous symptoms produced by unhealthy mouth conditions that we are particu-

larly interested in this chapter. Insomnia and facial neuralgia have been previously mentioned. The nervous symptoms are not constant, varying considerably in different individuals. A very common symptom is paresthesia in the fingers and toes—a “pin and needles” sensation. Otalgia, or pain in the ear, headache, vertigo, sciatica, brachial and other forms of neuritis, often stubborn to other treatment, have responded to dental treatment. Depression, mental irritability, agitation, worry, and various troubles loosely termed “nervousness,” have been cured by attention to oral hygiene.

It is well to remember that “nervousness” may be caused by unerupted teeth. In adults the ones most often at fault are the wisdom teeth. Misplaced teeth may also be at fault, as well as illy fitting dental appliances, such as caps, bridges, etc.

Sad to state, dentists are very often responsible for the diseases which result secondarily to mouth disturbances. Hurrying after the immortal dollar, or impatient with their patients, a cavity is filled without its first being rendered thoroughly aseptic. In this cavity bacteria proliferate. Burrowing up the tooth canal they form an abscess at the root tip. The patient may not be conscious of this—as a rule he is not

—and the presence or absence of a tooth abscess can often only be determined by taking a roentgenogram of the tooth. It is true that dental patients often hurry the dentist so that it is impossible for him to do good work; but there are many dentists who do inferior work routinely. Bridges and crowns placed over diseased roots are fraught with danger. Pivot teeth may hide an abscess. It is better to patronize a careful, conscientious dentist who takes his time and refuses to be swayed by the importunings of his patient to hurry. It may cost a little more, both to the individual's feelings and his pocketbook, but where health is concerned these drawbacks are trivial. Dentists who do cheap work, work quickly, and while they may gratify the patient as far as external appearances of the mouth are concerned, still, if the patient only knew the multitude of sins they have covered up but which will sooner or later be revealed, he would shun them.

Prevention is, of course, better than cure. And prevention of mouth disease should be begun at birth, or at least with the appearance of the baby's first teeth.

The time at which the first, or milk teeth appear is variable. Nursing children usually develop teeth earlier than those who are bottle-

fed. The two lower central incisors generally appear from the sixth to the ninth month.

It is the first teeth which are most often neglected, parents reasoning that as long as they are not permanent their care is of little or no importance. If the milk teeth are properly cared for, the permanent teeth are more apt to be symmetrical in outline. Teeth that are neglected become carious, and diseased milk teeth often explain attacks of indigestion, chorea, malnutrition, disturbed sleep, fidgets. Another erroneous idea of many parents is to attribute many of the disturbances of infancy as being due to teething. Serious disease is thereby often overlooked. The author only recently saw a child whose mother, fortified by the opinion of a neighbor that her child was simply suffering from cutting a tooth, put off medical attention until it was too late. In place of cutting a tooth the child was "cutting" diphtheria. The majority of children cut their teeth with little or no difficulty. That restlessness, indigestion, fever, constipation, and other disturbances may be dependent on teething is true, but it is the last thing for the parent to think of. If she errs it is better that she err on the safe side. If an infant's gums are swollen and the symptoms disappear on the eruption of a tooth, then we are justified in concluding that

the tooth was at fault, but one should not postpone calling a doctor if the baby remains ill more than a day or two. If the parent inspects the gums, she should at the same time inspect the throat, as this part is frequently diseased and overlooked. In children swollen gums may be due to many causes, such as scurvy, ulcerative stomatitis, malnutrition, etc., which demand different treatment than that usually employed in difficult detention.

The infant's mouth, and body in general, can be protected by taking special pains to keep nursing bottles and nipples rigidly clean; also by preventing it from sucking miscellaneous objects of one form or another. Milk bottles with long, slender tubes are dangerous because germs and food particles collect in the tube and are not easily removed. From a hygienic point of view it is advisable to cleanse the infant's mouth occasionally, using lukewarm water or a boracic acid solution. Unless this is done very carefully the soft tissues of the mouth may be damaged. If any of the boracic acid solution is swallowed, it may upset the infant's stomach. With the appearance of the double teeth they should be cleaned daily. One may use a soft cloth, cotton, or a very soft toothbrush. Care must be exercised to prevent damage to the mucous membrane. A

good grade tooth powder or lukewarm water may be employed.

As a rule, children do not suffer from pyorrhea unless they are subjects of scurvy or other systemic disease. In childhood the child should be taught to cleanse the teeth before breakfast, after each meal, and at bedtime. In this way it is taught good habits, which will persist. A moderately hard toothbrush should be employed. After using, the brush should be placed in a test tube, or covered glass filled with alcohol or boracic acid solution. It is a mistake to try to prevent oral infection and at the same time leave the toothbrush exposed. Each child should have its own brush, marked, if needs be, to prevent mistakes. Tooth powder need not be used more than once a day, scrubbing with water at other times being sufficient. After cleansing the teeth the mouth should be rinsed with water. Fruit juices help to prevent dental decay, and thorough mastication, as well as the eating of hard, crusty foods, tends to develop and mechanically cleanse the teeth. At frequent intervals the child should be taken to a dentist so that beginning defects may be detected, and easily and less painfully remedied than would be the case if they were allowed to progress.

There are a number of pernicious practices

which children—and adults, too, for that matter—indulge in which need correction. Among these are the habits of placing pencils, pens, and other objects in the mouth. Eating after others, “cords,” for instance, is dangerous. The “old oaken bucket” is valuable, from a sentimental point of view; but how many diseases it has caused will never be known. Drinking out of the same dipper is to be discouraged. When traveling an individual should have his own cup; and the child should be furnished a drinking cup for use at school in case the school is not equipped with a sanitary drinking fountain. Public towels and soaps are fairly “alive” with germs; likewise money. Hands should always be washed after handling money and before meals. Turning the leaves of a book with the fingers moistened with saliva is dangerous. Bacteriologic studies have shown that books may be disseminators of infection. Whether or not osculatory delights should be denied everyone is problematical; at any rate preachment to that effect is in vain. However, as far as babies and children are concerned, the practice is to be rigidly forbidden. If the little one is kissed, it should be kissed on the forehead or cheek, never on the mouth. Infantile paralysis, tuberculosis, grippe, sore throat, and many other

diseases are transmitted by kissing. It may be argued that if individuals do everything the doctors tell them to do, it will soon be necessary to travel around with a bottle of germicide in each pocket and a magnifying glass, so that each person encountered may be inspected for the presence or absence of germs, and disinfected if needs be. No doubt many of the health rules advocated from time to time impress the average lay person as being about the "limit"; nevertheless, neglect of the precautions mentioned above has been the direct cause of many a death, and for that reason, and that solely, they are promulgated.

There is no good reason why adults cannot cleanse their teeth morning and night, and after each meal. If neglected at other times it is particularly important that they be cleansed in the morning and at night, since dental decay is more active during the night than at other times.

In regard to the toothbrush, one should purchase a brush that does not contain any loose bristles, since these may damage the gums and thus predispose to infection. A toothbrush soon outlives its period of usefulness; when it becomes soft it is valueless for cleansing purposes. For this reason a brush should be bought frequently. Some individuals' teeth cleanse easily and do not

require a very stiff brush; others require a stiff brush and vigorous brushing. A brush with stiff bristles of different lengths, so that all parts of the teeth may be reached, is to be preferred. If the gums are very sensitive a moderately stiff brush may be utilized for the time being. Rapid, rotary movements, with particular attention being devoted to the back teeth, and to the posterior surfaces of the teeth, is the method to be employed in cleansing them. A good antiseptic solution for the brush can be made by adding one part liquor formaldehyde to twenty-five parts of water.

There are any number of tooth pastes and powders on the market, most of which are serviceable. There are some, however, which destroy the enamel of the teeth, and for this reason the dentist's advice should be sought as to the best dentifrice. As in children, it is not necessary to use the dentifrice more than once a day; at least not after the teeth have once been put into and are maintained in a healthy condition.

Dental floss is sometimes useful for cleansing purposes. There is danger that its use wound the gums, so if it be employed caution must be observed.

Mouth washes are valuable. If the gums bleed easily astringent washes, such as dilute alcohol,

dilute tincture of myrrh, dilute tannic acid solution, may be used with advantage. A mouth wash made by adding to a glass of water one or two drops of the fluid extract of ipecac, or a drop of a solution of the fluid extract in alcohol (one dram of the fluid extract of ipecac to an ounce and a half of alcohol) on a wet tooth brush, is recommended as a preventive of pyorrhea. Individuals troubled with "acid mouth" may use alkaline mouth washes with advantage. There are a number of these on the market, most of them being dependent upon magnesia for whatever efficiency they may possess. As useful, probably, is a wash made by dissolving ordinary baking soda in water.

The use of peroxide of hydrogen habitually as a mouth wash is dangerous. Peroxide has some value in pus conditions, but even then it should only be used for a limited time. No doubt it sells so readily, and people have so much faith in it, because of the psychic influence it possesses. Coming in contact with organic matter, it liberates oxygen, the bubbling of which convinces the user that it is really doing effective work. Peroxide is not good for either the teeth or the gums; it is rather harmful.

When a tooth is diseased it behooves the individual to consult his dentist. It is a mistake,

however, to have a tooth pulled that might be saved; but it is also a mistake to have it filled improperly. Dentists are sometimes inclined to save a tooth when they know full well that it is impossible for them to thoroughly render its cavity aseptic. When they say a tooth needs extraction it generally does. It is far better to lose a tooth than to suffer heart or kidney disease; and therefore, if the tooth cannot be rendered aseptic, no amount of persuasion should induce the individual to let it remain. Since many dentists do not seriously appreciate the relation between oral infection and systemic disease, it is well that both doctor and dentist be consulted when definite mouth disease and systemic disease exist.

A number of investigators a short time ago announced that the *endameba buccalis* was the specific cause of pyorrhea. It was also stated that emetin, the active principle of ipecac, was the specific cure. It was recommended that emetin be given in half-grain doses hypodermatically, by the physician, for three to six successive days. By mouth this agent causes great nausea and vomiting. For oral administration alcresta tablets were advised, to be taken three times a day for four to six days, and were said to be as efficacious as emetin.

Like many another medical "discovery" this statement was given wide credence and for a time the medical journals published enthusiastic reports in verification of it. So widespread did the use of emetin become that not only was it heralded as a cure for pyorrhea, but for many other diseases as well. Cases of psoriasis, a chronic skin malady, hemorrhagic conditions which had failed to respond to other treatment, were said to be checked by emetin; likewise other diseases, acute and chronic. But a reaction has now set in; in place of encomiums emetin is meeting with abuse, though some still firmly believe in its efficacy for the condition for which it was first recommended. The consensus of medical opinion at the present time is that emetin and other ipecac preparations, instead of curing pyorrhea, mask it. In other words, emetin removes the external appearances of the disease, but it does not destroy all the organisms causing it. Many of the parasites are lodged in places beyond the reach of the blood stream and its medicinal-bearing agents. Walled off, they are safe from emetin's interference, and unless the drug be constantly taken, which by reason of its expense is not probable, they will sooner or later proliferate, reinvade the surrounding tissues, and hence recause the pyorrhea. Grant-

ing, for sake of argument, that ipecac preparations can cure pyorrhea, it follows that unless the parts that have been destroyed by the disease process are repaired reinfection will take place. The gums may heal, but a decayed tooth never regenerates. Again, the most enthusiastic of ipecac's friends admit that the "cure" is not always permanent; reinfection, or a reestablishment of the old infection, taking place in a few weeks after treatment has been discontinued.

It must be borne in mind that while endamebae can be demonstrated in most cases of pyorrhea, the pyorrhea may be dependent upon infection with other organisms solely, or in association with the endamebae. On these other organisms ipecac has no effect whatever.

Too much faith, therefore, should not be placed in the efficacy of ipecac or other agents recommended as a cure for mouth disease. Certain mouth washes are advertised with this presumption, but the best that can be said for any of them is that they may be preventive, but are in no way specifically curative when definitely established mouth disease exists.

For the cure of pyorrhea it is necessary that the individual receive attention from his dentist. Attention to the care of the teeth, mouth washes, etc., may aid a cure, but it requires the knowledge

and skill of the dentist for the thorough removal of the disease-producing organisms. During treatment for the condition the individual should obtain a maximum of fresh air, good food, avoid worry, practice optimism, and frequent optimistic surroundings.

It sometimes happens that pyorrhea develops in spite of rigid oral hygiene. For this reason it is advisable that the dentist be visited frequently, say every two months. An added reason for consulting the dentist early rather than late in the progress of mouth disease lies in the fact that cancer tends to develop in mouths that are unhygienic. Cancer is more prevalent in acid-secreting, or acid-bathed surfaces, than those which are alkaline. As a rule, the reaction of the saliva is neutral or slightly alkaline, but under the influence of mouth disease the reaction becomes acid. Some medical men think that stomach cancer may be indirectly caused by the swallowing of bacteria and their toxins, or, circulating in the blood stream, by clogging up the vessels which supply the stomach. Parts subject to irritation are frequent sites of cancerous growths. In association with cancer of the tongue or cheek a jagged tooth is often found.

Persons troubled by insomnia who also suffer knowingly from mouth disease may be relieved

by attention to this part of the body. If crowns or bridges have been placed on the teeth, it may be that these hide abscesses which are responsible for the trouble. Whether this is true or not can only be determined by an X-ray examination of the parts. Even should the teeth be apparently healthy the X-rays may disclose a diseased root tip. Some dentists are equipped to make these examinations; all hospitals are, at any rate. The cost is comparatively little, and if an individual has suffered from insomnia long, and without being able to discover a cause for the disorder, it is advisable that such an examination be made.

"If I remember right, Aelia, you had four teeth; a cough displaced two, another two more. You can now cough without anxiety all the day long. A third cough can find nothing to do in your mouth."—MARTIAL.

CHAPTER X

VALUE OF EXERCISE AND FRESH AIR

"A man must often exercise or fast or take physic, or be sick."

—SIR WILLIAM TEMPLE.

"Take a walk to refresh yourself with the open air, which inspired fresh doth exceedingly recreate the lungs, heart, and vital spirits."—HARVEY.

THERE is nothing more conducive to sleep, to mental and physical serenity, and nothing that will create in us more of the joy of life, than exercise, properly and consistently taken. If the thousands of persons who suffer from no real organic disease, but whose troubles are the result of sedentary lives, ignorance, or laziness, could appreciate this fact two doctors would surely ride one horse. But by the many exercise is not taken seriously; through a preconceived idea that it is unable to influence their individual cases it is neglected. On the other hand, to the few appreciating its true worth, and who, believing in its efficacy, practice their belief, it has proved almost magical, if in not entirely eradicating their disorders, then, at least, in markedly ameliorating their subjective sensations.

We are wont to gaze jealously on the athlete whose feats of strength and endurance, and whose perfect physical frame bring him to the notice of the public. And yet we know that to be the possessor of such qualities as excite our innocent envy it has been necessary for him to devote much of his time to systematic training, so that not only will his muscles respond to any demand made upon them, but also his lungs, his heart, and his will. We know, too, that he has to lead a simple, well-regulated life, free from indulgences and excesses of any kind, if he is to remain long numbered among the foremost. We know, too, of cripples whose paralyzed limbs have been greatly improved by systematic movements; a champion high jumper of the world was born a cripple, but evolved into a healthy, well-developed man because of exercise taken with the sole object of benefiting his unhappy state. All this and much more of the benefits exercise holds are we cognizant of, but because it requires a little more exertion on our part, and because it does not rapidly demonstrate its effects, we seem content to do without it.

While we recognize the power for good exercise possesses, we must not make the mistake of considering it a panacea for all the ills to which flesh is heir. It is a valuable therapeutic agent

when combined with other measures that act in harmony with it, but when we deride the efficacy of truly medicinal remedies, as some cults of so-called physical culturists do, we become extremists. Exercise will never cure a case of diphtheria or a tumor, but it may cure a case of insomnia, if the insomnia depends upon sedentariness.

Probably I could quote no better example to demonstrate the folly of deriding the physician's worth than by depicting briefly the method used by the Emmanuelists in their treatment of sleeplessness. I am not an Emmanuelist, and for that matter never will be; neither am I favorable to their teachings. I am, however, ready and quite willing to acknowledge, from a medical point of view solely, that should insomnia or other ill be due solely to a morbidness of thought, but not based on underlying disease, their method of suggestive therapeutics may produce results. Open confession is good for the soul; all woes are made more bearable by the sympathies of friends, whether such sympathies are real or feigned. And by constant suggestion it is quite possible to dispel many a malady.

To come back to the subject, Emmanuelists do not, as a rule, treat insomnia unless they are convinced that the disorder is not caused by

existing disease of some organ or part of the body. If in doubt, the patient is sent to a competent medical practitioner, who, if he discovers a pathological condition, undertakes its treatment. It is true that the Emmanuelists ask the return of the patient; but even so, if Emmanuelists, whom some of us may look on with prejudice and jaundiced eye, recognize and appreciate the true value of the medical profession, why should not the physical culturists and other schools of so-styled drugless doctors? It is either because of ignorance or jealousy.

Exercise is a potent factor for good; it is to be nurtured. Moreover, it is a necessity, if a well-nourished and perfectly working body mechanism is to be had. We are inclined to think that it is only the skeletal musculature that derives the benefit; but, as a matter of fact, there is no organ or part of the body that it does not, either directly or indirectly, favorably influence.

When moderate, exercise causes the heart to beat more rapidly, yet steadily and forcibly, thereby furnishing an abundance of well-aërated blood to all the tissues; the inclination of the blood to stasis in the extremities and remote organs is lessened; waste products are rapidly carried to the eliminatory organs and are more

completely got rid of. Thus in the lungs, because of the increased blood supply, a greater quantity of carbon dioxide gas is given off, and oxygen takes its place. According to Pettenkofer and Voit, the amount of oxygen absorbed during an ordinary working day, with the usual interval of rest, is about one-third greater in amount than that during a day of inaction, and the carbon dioxide gas produced is increased about two-fifths. The more oxygen the tissues have the more properly do they work. Oxygen is life: without it all things cease to exist.

During exercise more blood is sent to the skin, consequent upon a dilatation of the cutaneous vessels. In this way heat is carried from the interior of the body and is dissipated through this route. The sweat glands assume greater activity, their ducts are cleansed, and waste products that would otherwise fall to the lot of the kidneys to eliminate are removed. This latter fact has much practical importance, particularly for those who suffer from kidney disease or other disease accompanied by a deficient elimination. Pettenkofer and Voit have again shown that during a day of average work the amount of water given off by the lungs and skin is nearly twice and a half that excreted during a corresponding period of rest. Because of this fact the

amount of urine is diminished and the kidneys rested.

The general expenditure of muscle energy and the combustion of the muscle's stored-up products call for a new supply of material, and consequently appetite is whetted. The desire for proteid foods and for fats is particularly increased. The musculature of the stomach and intestines is massaged, digestion and absorption is accelerated, peristalsis promoted, and hence the tendency to constipation is diminished.

On the nervous system exercise acts as a tonic. The muscles are trained not only to respond to the will, but to reflex stimuli in a moderate, co-ordinate manner. The better circulation through the brain strengthens the intellect, sharpens the insight, increases the capacity for mental work, and exerts a general mental betterment.

On the other hand, deficient exercise predisposes to a variety of disturbances. It favors weakness of the heart, weakness of the lungs, with an inability to withstand the onslaught of acute or chronic disease. The skin may become harsh and dry, and there may be a tendency to dermatoses, such as acne. Anorexia, feeble digestive power, and constipation, with its accompanying

symptoms, may result. The nervous system becomes deranged; there is morbidness, irritability, undue sensitiveness, fidgets, and insomnia.

While moderate exercise is a power for good, overexercise may lead to palpitation of the heart, hypertrophy of the heart, valvular disease of the heart, congestion of the lungs, and maybe sudden death.

There are some of us who need more exercise than others. We are not all as fortunate as he who toils in the fields under the canopy of the wide, blue sky, and whose rosy complexion and sinewy arms bespeak the physical perfection that is his. We are forced to toil in stuffy offices, bending the livelong day over ledgers, or what not. Practically the only exercise we procure is that obtained when we walk each day to and from our never-ending work—if we even get that much. The evenings we have to ourselves we squander in theaters, or in smoking a favorite pipe in a poorly ventilated room. It is a sin against nature to commit suicide, but that is just what we are doing daily, without experiencing the least pang of conscience, and seemingly perfectly content to allow matters to proceed as they are.

We are accused of being a lively nation. We

are, it is true, to our bodies' destruction. Bent upon gain, we strive and toil day in and day out, year in and year out, and just as we feel that fortune is in our grasp we die. We must work—the sin of Adam compels us to; but we must play also. Monotony, monotony, all is monotony, when we should mingle work with play, play with laughter, and laughter with love. If we play and laugh and love, we exercise our bodies and feed our souls with the fire of life.

Exercise the body most, the mind least. And when we exercise let it be out in the open, whether or not the sun is shining down with torrid smile or frigid countenance. If there is one thing above all others that we grossly, sinfully undervalue it is fresh air; but like all things that can be had for nothing, we are averse to procuring all of it we can. We sleep with windows shut when they should be nailed open; we work in dusty shops, in poorly ventilated offices, howling with anger should a blast of heaven-sent wind disturb the composure of the vitiated atmosphere. We are afraid of draughts of air, but revel over draughts of insidiously killing drink; we claim night air is injurious, when the only night air that is injurious is last night's air; we are fearful of snow and hail and rain, when

these gifts of nature serve but to purify the atmosphere, and render it sweeter. And then when, in after years, we feel out of sorts, broken in health and in mind, when the horizon of our hopes becomes dimmed with doubts, fears, and forebodings, we wonder why. But sins against nature must and will have their pay.

Air is life. The purer it is the more laden with life-giving properties is it. The only way we can procure air is through our lungs, but many of us, if we could manage to live without breathing, would be content to do so.

The lungs (lights) are two spongy organs situated one on either side of the thorax. Each organ is divided into lobes; the latter are in turn subdivided into smaller lobes, or lobules, the number of which is estimated to be 600,000,000. The extent of surface through which oxygen is absorbed is said to be about 1,300 square feet, and through this surface is excreted over two pounds of poisonous material each day, representing about one-third of the body waste. The blood, laden with impurities, circulates through the lungs once every minute and a quarter.

While the lungs have 1,300 square feet for the aëration of the blood, it does not necessarily follow that all this surface is used. Unless the lungs are properly expanded portions of them become

closed, a state known as atelectasis. These unexpanded portions become filled with tissue detritus, and being imperfectly nourished are easily vulnerable to the attacks of invading bacteria. That a complete emptying of the lungs is necessary several times a day is shown by the following physiological facts:

The amount of air that passes in and out of the lungs with each inspiration and expiration is from twenty to thirty cubic inches. This is known as *tidal* or *breathing volume* of air.

The amount of air that can be forced into the lungs by a deep inspiration is about one hundred and forty cubic inches. This is known as *complemental* air. The amount of air remaining in the chest after the ordinary expiratory efforts is about one hundred cubic inches. This is known as *reserve* air, and can be expelled by a forcible respiration.

Residual air is that portion which cannot be expelled even by the most forcible expiratory efforts. It amounts to about one hundred cubic inches.

Thus it will be seen that ordinary inspiration and expiration do not suffice to cleanse the lungs of their impurities. The furthest removed portions are most apt to suffer. When we do

not aid nature to get rid of her excrement, the organs are subjected to an almost constant bath in carbon dioxide gas and other noxious substances. It is practically the same as allowing the body exterior never to be cleansed, a thing we would never do.

Proper use of the lungs means strength. The strongest animals are those which breathe deepest; for instance, the elephant breathes six times a minute, the mouse one hundred and fifty times a minute. Pick out the men of marked physical and mental attainments and you will, on an average, find them to be deep breathers. Deep breathing means increased nutrition, better elimination, a clearer skin, a brighter mind, a better digestion; in short, a better all-round state of body and mind.

Some persons imagine that cold air predisposes to colds, pneumonia, etc., whereas people do not have any of these disorders because of cold, but because they insist on living in atmospheres where the temperature is greatly in excess of that necessary for warmth. Thus, when they change from their overheated, poorly ventilated rooms to those that are properly aerated the suddenness of the change inhibits the functions of the mucous membrane lining the respiratory apparatus, and inflammation results. The air

of most abodes is not only poisonous by reason of human and industrial waste, but is also polluted by germ life. It is in unhygienic surroundings that the organisms which cause tuberculosis, grippe, and other infectious diseases thrive.

Just as poor air is capable of rendering one subject to the attack of disease, so is pure air capable of preventing it, or at least of holding it in check, when disease actually exists. During the past ten or more years the mortality from tuberculosis has diminished fifty per cent. No drug can claim the credit for this, for the credit is solely due to pure air, good food, sunshine, and prophylaxis.

Admitting that air and exercise are fundamental principles of good health, how and by what means are they best obtained?

Of course, all exercise wherein the skeletal musculature is called into play exacts an increased, healthful activity on the part of the lungs. The best sort of exercise for one to take is one he likes to take. The lover of golf, the hunter, the canoeist, need seek no further. But for most of us a brisk walk of a mile or two, providing there are no contraindications, is best. Next in value comes bicycle riding. The bicyclist is, however, nearly obsolete, since the rapid ad-

vent of the automobile. While the latter vehicle does good, inasmuch as it freshens the mind by giving it a change of scene, and causes people to be in the open more, it is nevertheless detrimental, since its owner walks less. Riding in an automobile requires no muscular exertion that benefits the body. It is conducive to laziness.

Next to wheeling, golf, cricket, and croquet are worthy of consideration. The exertion necessitated is not great, the mind is active, and since they are played in the open air mental and physical betterment follows. Baseball is the most beneficial of outdoor sports.

Tennis, football, competitive athletics in general, cannot be indulged in by the general public. The amount of play cannot be gauged, the desire to win may lead one to overexert himself. The comparatively large numbers of victims of heart and arterial disease among athletes who compete should serve as a warning to those who contemplate taking up such sports.

The best form of indoor exercise, and one that is not hard to persist with, is indoor rowing. Dumb-bells, Indian clubs, medicine balls, etc., appeal to some, but the vast majority first take them up with enthusiasm, which soon waxes, wanes, and dies. What most of us lack is con-

sistency and persistency. If we make up our minds to do a thing, if any will power at all remains, we should not be deterred from our determination by any minor inconveniences which may arise. If the task is at first a bit troublesome, if we continue with it, it will become a pleasure, a sort of second nature.

Although self-imposed exercise may lack enthusiasm, we should not make the mistake of thinking that it is valueless because the mind does not relish it. It does some demonstrable good, though not as much as if it were undertaken and followed with pleasure. Exercise taken with an object in view, as mountain climbing, and exercise taken in company with others, is apt to be relished. It must be remembered that exercise taken consistently and systematically during the summer months and given up as soon as the air begins to turn cold is of little value, possibly detrimental.

Not only should the body be exercised, but the mind as well. To look after one only is at the expense of the other, generally. There are various exercises for the mind. The formation of a hobby, especially one which carries the individual into the open air, is particularly valuable. Interesting, instructive literature, free

from morbidness, is also to be advised. Attendance at football and baseball games is both restful and stimulative to the mind. Card playing is apt to cause loss of sleep, especially if money is at stake. The same is true of pool playing. A game of checkers, chess, or dominos is to be preferred.

Fresh air we may procure in various ways. We should make it a practice to sleep out of doors, or as near as possible to it by means of sleeping in a window tent. We should strive to be in the open as much as possible. Deep breathing morning, noon, and night should be practiced. Such breathing should be done through the nose, should be slow, rhythmical, and not forced. A very good method of deep breathing is to press a finger against one nostril so as to close it; breathe in through the unclosed nostril, and let the air out the same nostril. Repeat the process with the opposite nostril, at the rate of two or three times a minute.

Thomases exist every place. If there be any doubt in your mind concerning the value of fresh air, deep breathing, and exercise, make a personal test of their value on yourself, say for six months. If you do not notice a well-marked improvement in your state of health, if your whole

system does not ooze with the joy of life, then—but why doubt? There are no “ifs” about it.

“Exercise is the chief source of improvement in all our faculties.”—BLAIR.

“Only one letter differentiates the word ‘health’ from ‘wealth.’ And the things themselves are more closely related. Every time you get out in the sunshine and laugh and play, you are absorbing potential wealth into your being.”—HUBBARD.

CHAPTER XI

HYGIENE OF THE BED AND THE SLEEPING ROOM

"O bed! O bed! delicious bed!
That heaven upon earth to the weary head."
—HOOD.

THE hygiene of the bed and the sleeping room is of considerable importance, if a pleasant sleep is to be obtained. As Isaac de Benserade says:

"In bed we laugh, in bed we cry,
And born in bed, in bed we die.
The near approach a bed may show
Of human bliss to human woe!"

The bed should be placed near the inner wall of the room and away from the windows and fireplaces, so as to avoid direct currents of air. Canopies and other adornments are to be dispensed with, since they interfere with ventilation and serve as receptacles for dust, microbes, etc. The size of the bed is not important, neither is its structure, though preferably it should be made of metal, so as to be cleansed easily.

It is best that the bed clothing be as simple as possible. A hair mattress makes the bed comfortable, firm, yet elastic. A feather bed is never to be used, if for no other reason than a sanitary one. It is soft, absorbent, damp, and difficult to cleanse. As we have learned, the skin actively functionates during the night and if the bed material be absorbent it becomes impregnated with sweat, becomes damp, while the decomposition of the sweat produces unsavory odors. Cotton sheets are preferable to all others, since they are not good conductors of either heat or cold and are not great absorbers of moisture. The coverings of the body should not be heavy, as quilts and counterpanes, lest respiration be impeded. Blankets are not weighty and are warm, two factors much in favor of their employment. Several thin coverings are better than a single one of equal weight, since the air that readily finds access between them is not conducted. Wool is prone to prove irritating. The bed clothing should come up high enough to cover the lower portion of the neck, but no one should sleep with the head beneath the clothes, since body emanations are thereby inspired. Those who complain of waking up at night because of cold will find relief, and still be enabled to obtain all the fresh air they desire, by placing

next to the mattress a light blanket, this in turn being covered by a sheet. In this way cold air is prevented from rapidly coming up from below and so chilling the body surface. It is unnecessary, I hope, to remark that the bed clothing should be frequently changed and washed. Moreover, during the day all the sheets, blankets, pillow cases, mattresses, etc., should be thrown back, so as to allow the air to permeate all their parts.

A good bedroom should be roomy, so as to provide a maximum of fresh air. Its essential furnishings, besides the bed, should be a bedside table, a carpet, an easy chair, and a commode. Draperies, especially elaborate ones, should be avoided. Furniture should be as simple as possible, inasmuch as it is not so liable to afford a lodging place for dust. It is also easily cleansed. Plants sometimes serve to brighten the appearance of the room, and also aid in the air's purification. In these days many open fireplaces do not exist; but if one is present, it is not objectionable, since the heat produced and its psychic influence do much to aid sleep. Again, it serves to ventilate the room. Toilets should never be in sleeping rooms, for obvious reasons, neither should the body's excretions be allowed to vitiate the atmosphere. The walls

and ceilings should be of a neutral tint, such as pale green. There is nothing more restful to the eyes than the color green. Wallpapers that are conspicuous had better be omitted. The room should, of course, be brightened by pictures, which, however, need not be staid.

Rattling window blinds or other defects that may cause annoyance should be remedied. It is also wise to take adequate precautions against mosquitoes and other pests, which if able to rout the sound sleepers, how much more so one troubled with insomnia! The room should also be far from the noises of house and street, its walls and flooring being sufficiently dense to overcome these. It is recommended that the room face the south or west, so as to be more accessible to the rays of the sun. "Where the sun does not enter, the doctor does," is an old Italian proverb. There should be at least two windows, in order that adequate ventilation be possible.

Ventilation of the sleeping room is an all-important question, and one that needs adequate consideration. While people do not seriously object to their rooms being thoroughly aired while not inhabited, they are quite averse to allowing any night air in, claiming that it causes colds, etc. This is, however, untrue; the reverse

is most often explanatory. Given adequate bed clothing and no draughts, night air is not injurious. If it were, why should we encourage the victims of pulmonary diseases to sleep out of doors constantly, no matter the season of the year? Outdoor sleeping is the main agent of value in sanitarium existence, whose motto is, "Nail the windows open." Not infrequently the patients awake in the morning to find themselves covered with snow, but when protected by ear-laps, etc., no harm accrues. We have read of persons found dead in snowstorms and windstorms, but the snow and the wind were not causative of death, *per se*. They simply put the finishing touches on those who fell from exhaustion, heart disease, apoplexy, etc.

A night spent in a stuffy, ill-ventilated room does not produce a satisfying sleep. The person is apt to awake feeling irritable, mentally fatigued, his face sallow, and his eyelids puffy. That puffiness of the eyelids may be a symptom of heart or kidney disease, we should always bear in mind.

The Black Hole of Calcutta has often been quoted as an example of the poisonous effects of impure air. With its history and its terrible lesson we are all more or less familiar. But a case representing just as forcibly the effects of

contaminated air is that of a certain French gentleman named M. Deal, who resolved to destroy himself by burning charcoal in a closed room. He left the following diary:

"I have thought it useful, in the interest of science, to make known the effects of charcoal upon man. I place a lamp, a candle, and a watch on my table, and commence the ceremony.

"It is quarter-past ten. I have just lighted the stove: the charcoal burns feebly.

"Twenty minutes past ten: the pulse is calm and beats at its usual rate.

"Thirty minutes past ten: a thick vapor gradually fills the room: the candle is nearly extinguished. I begin to feel a violent headache: my eyes fill with tears; I feel a general sense of discomfort; the pulse is agitated.

"Forty minutes past ten: my candle has gone out; the lamp still burns: the veins at my temples throb as if they would burst; I feel very sleepy: I suffer horribly in the stomach; my pulse is at eighty degrees.

"Fifty minutes past ten: I am almost stifled: strong ideas assail me . . . I can scarcely breathe . . . I shall not go far . . . These are symptoms of madness . . .

"Sixty minutes past ten: I can scarcely write . . . my sight is troubled . . . my lamp is go-

ing out . . . I did not think it would be such agony to die . . . ten . . .”

What more he wrote was illegible. M. Deal soon was dead, poisoned by carbon dioxide gas, the very same gas that many of us allow free rein in the household. It may not kill us as rapidly as it did M. Deal, but nevertheless it is killing us, slowly yet surely. While the present day authorities on hygiene do not believe that the presence of large amounts of carbon dioxide gas or harmful expired products of respiration have much to do with causing the ill effects attributed to poor ventilation, but that these ill effects are due to a high temperature and a high humidity which prevent the body heat from being dissipated, still if we see to it that our abodes are well aired we may feel reasonably certain that the body will be enabled to throw off its surplus heat and that the air we breathe is not contaminated.

The question of ventilating the sleeping room is easy of solution. The windows are to be opened wide during the day. A few hours before retiring they may be closed so that the room may feel comfortable when undressing. They should, however, be again opened, top and bottom, before going to bed. The air from the lower window may be deflected upward and

draughts be obviated in many ways. A common plan is to place a board crosswise under the lower sash, so as to fill the opening made by opening the lower window. Sleeping out of doors can be followed by all, even children. In lieu of this "nailing the windows open" will suffice.

While most people will soon leave aside their prejudice concerning cold air after they experience its benefits, they may, however, suffer many misgivings about arising on cold, winter mornings. If a good-sized bathrobe or dressing gown is kept close to the bed, it takes but a moment to wrap one's self in this and then to retire to a warmer room for dressing.

Individuals in good health may be able to sleep comfortably without pillows. This practice, which is to be encouraged, tends to prevent round shoulders and contributes toward a cure when such a condition exists. Lying prone with one arm extended above the head and the leg opposite drawn up, which attitude may be repeated on the opposite side, can take the place of pillows. While posture during sleep is, after all, a matter of no great importance, that during the waking period is. Many complaints, such as headache, constipation, fatigue, cold hands and feet, biliousness, etc., are due to a

slouching attitude, which lessens the support of the abdominal organs and thus favors stagnation of blood in the liver and splanchnic vessels. The abdomen should be taut; in this way the liver, intestines, and stomach are massaged and the circulation in the visceral blood vessels promoted. An erect carriage and corrective exercises are advisable when round shoulders or a lax abdominal wall exist. Individuals who are obese, or who suffer from pendulous abdomens, may find relief by wearing a suitable abdominal supporter or bandage.

One pillow, small, flat, and moderately hard, should be enough for most individuals. For insomniacs, however, two may be required. In cases of sleeplessness due to arterio-sclerosis even three may be necessary. In arterio-sclerosis, as we have learned, it is common to be sleepy in the daytime and wakeful at night, because the recumbent position sends more blood to the brain. A semi-erect posture, therefore, favors sleep in such cases. In place of a number of pillows a triangular frame may be made, which should be padded to prevent injury to the skin. To prevent falling out of bed, a long board should be placed on either side of the bed. Blocks placed under the upper bedposts, or the use of a specially designed bed, such as is used

in hospitals, are useful and practical. These methods are also of value in case of sleeplessness due to asthma, cardiac or renal disease, or other disease accompanied with interference to respiratory movements.

A pillow stuffed with hops or balsam is sometimes of service, particularly in nervous individuals. The odor of the hops, or of whatever forms the make-up of the medicated pillow, no doubt gives the individual something to think about other than his woes, and by distracting the mind from its unpleasant thoughts promotes sleep. Perfume, we know, has a soporific power. Of themselves, medicated pillows, just like medicated baths, have no intrinsic value apart from the favorable psychic influence they produce. Neurotics, worriers, and those whose insomnia is due to overfatigue may find comfort in their employment. The Chinese and the Japanese often woo and win sleep by placing under the neck a cylindrical pillow made of old papers. The ticking of a watch under the pillow may, by the monotonous sound it produces, cause sleep. In very nervous individuals it may defeat it, however.

Many persons, especially the old, find great comfort from wearing a nightcap. In many cases they have become accustomed to its use,

and so cannot part with it readily. Others find it of benefit because it prevents chilling of the head, and where a person is troubled by this disagreeable feeling, or is bald, it may be tried. Again, the wearing of light slippers in bed may prove useful to those who are sleepless because of cold feet. As has been previously stated, the best palliative remedy for cold feet is alternate hot and cold foot baths, followed by massage of the extremities. But many such sufferers are too lazy to do this; they have cold feet not only literally but figuratively. Simple but vigorous exercise of the toes and ankles may restore active circulation in the cold members. Hot bricks, irons, etc., are also useful in this condition. One should always be extremely careful in applying heat or cold to the sick, the very old, or the very young. If the heat or cold is too uncomfortable for the nurse, as tested by the cheek or back of the hand, then it is decidedly unfit for the patient.

Wet stockings may relieve burning of the feet. Other methods, however, are to be preferred. Burning sensations in the feet may be due to systemic or local causes, such as excessive sweating of the feet, prolonged standing, unclean stockings, fallen arches, corns, bunions, etc. Bathing the feet in cold or lukewarm water, to which a small amount of ordinary baking soda

has been added, is a ready and efficient remedy. A point of practical importance, for obese individuals particularly, is that permanent relief is often obtained from painful, burning feet, pains in the calves of the legs and back, by wearing specially designed shoes. These shoes are made so that the individual's heels fit into a concavity, and thus the arches are supported and strengthened.

While it is advisable that the windows be opened wide the year round, poor sleepers may awake with the sun because of the effect of light falling upon the eyes. In this case it is better for the individual to choose a room into which no morning sunlight enters, so as to get the advantage of all the fresh air possible. But if this is not practical or possible, then the window shades are to be pulled down at night, which, however, may necessitate partial closing of the windows, in case the beating of the shades against the windows annoy the sleeper. If a hall light is allowed to burn during the night, and proves annoying, the transom of the door may be masked. It should not be necessary to state that by no means should a light be left burning in the sleeping room throughout the night. Light is, ordinarily, antagonistic to sleep. There are some individuals, however, who because of habit

or a groundless fear of the dark are unable to sleep without a light burning in the room. Fear of the dark is, in an adult, a remnant of childhood's fears. Children should be encouraged to sleep in the dark from their earliest years. Exciting stories before bedtime, especially blood-curling ones, and scaring the child foster this fear of the dark. By explaining to the child the meaning of darkness and daylight, the avoidance of exciting stories, and by encouragement, this fear may be combated.

If possible the temperature of the sleeping room should not be higher than 60° F. For children not accustomed to outdoor sleeping a higher temperature is advisable. The cold of deep winter or the heat of the dog days of summer may produce sleeplessness. It is much easier to warm a room than it is to cool it. A cold bed may defeat sleep; also a damp one. Warm, dry bedclothing, undressing in a warm room so as not to chill the body surface, the plugging of cracks which admit cold air, hot-water bottles, warming the bedclothing before a fire, will usually remedy the effects of cold.

The sleeplessness of hot weather is not due so much to external heat, *per se*, as it is to stagnation of the body's heat and to sweat, which irritates the skin, produces a sticky sensation, and which

renders nervous individuals particularly restless and fidgety. Sleeping out of doors, or a cold bath, an alcohol rub, a sponge bath, light bedclothing, sleeping between the sheets without underclothing, are simple remedies for the sleeplessness of excessive heat. Another efficacious method is to interpose a straw matting sheet between the mattress and ordinary sheet. Still another is to wet one or more Turkish towels, or a sheet of body length. The wet cloth is laid on the bed, on which, after removing all clothing, the individual lies. There is not much danger of catching cold, and sleep often follows rapidly.

Restlessness or sleeplessness due to fever is best combated by alcohol baths, sponging, wet packs, or cold baths. Cold baths sometimes produce shock, and should therefore only be given with the physician's permission. The sick are often rendered restless because the bed is not kept smooth, the bedclothing not changed often enough, or breadcrumbs or other foreign materials are not removed. Bed sores, due practically to the same causes, are easy of prevention but difficult to cure. A buffalo robe between the mattress and sheet does much to prevent them.

The sick, particularly infants, are often made very restless by an ice cap. If the sick one frets

about it, tries constantly to shake it off, it had better be dispensed with. Cold sponges can adequately take its place. Sick infants and children often sleep soundly after the application of a mustard pack. The child is divested of all clothing and placed upon a warm blanket. A teaspoonful of mustard is added to a quart of warm water; in this a towel is dipped and wrapped around the body of the child, the towel in turn being covered by the blanket. It may be left on for fifteen or twenty minutes, at the expiration of which time a general reddening of the body is found. It may be repeated if necessary. The mustard pack is preferable to the mustard bath, inasmuch as the latter causes much inconvenience to the child.

Fathers and mothers might save themselves much disturbed sleep by training their infants from birth in good sleeping habits. If this has been neglected the infant will surely cry, and mostly at night, from habit. It has learned that it only needs to cry loud enough or long enough in order to be taken up, and as long as it can command it surely will.

Infants cry from many causes, of course; one should seek out the simplest first. It is not wise to attribute the cry as always proceeding from hunger, as so many mothers do;

or to "stuff" the child anyway in order to keep it quiet. Feeding the infant may temporarily stop its wailings, but sooner or later it will cry again—this time probably from indigestion. The cry of hunger is a fretful cry, and is often accompanied by sucking of the fingers. It ceases, however, when the child has been fed. When it cries after feeding it is probably suffering from indigestion. A spoonful or two of lukewarm water, gentle massage of the abdomen, placing the infant on its belly may remedy matters. Infants are now being taught to sleep in the prone position. Acute pain produces a piercing cry, accompanied by a drawing up of the limbs, tenseness of the abdomen, and pinching of the features. Minor degrees of pain cause moaning. The cry of temper is not seen in early infancy. It is loud, and accompanied by a violent kicking, throwing back of the head and hands, and an increase in the cry when the child is touched. In wasting diseases the cry is low, pitiful, and whining.

If the parent can satisfy herself that the air of the bedroom is not foul or overheated, that there is not too much bed covering, that the napkin is clean, the night clothes not too tight, and that the infant is not in pain, it is best to let it cry to its heart's content, especially if

it has been accustomed to being taken up whenever it cries. This sounds like a harsh dictum, but it is the only way to correct the infant. Experience has shown that it is the best way, too. In hospitals mothers are not allowed to take up their infants because they cry during the night, save it be at or very close to the regular feeding time. Should the infant cry, the nurse satisfies herself that it is not from pain or other good cause; if not, then the infant can cry as much as it will. Infants soon learn; one or two crying spells cure. In one hospital, where, by reason of serious sickness in the ward, the mothers were allowed to take up their children at night to preserve quiet, after a short time practically every infant in the ward had formed the habit of crying at night. This took weeks to correct, and it was corrected by paying no attention to it.

A point of practical importance is that there are very few diseases so serious as to require waking up a sick individual to give him medicine. Sleep is the best medicine, and unless advised to the contrary the sick should be permitted to sleep undisturbed.

"The bed has become a place of luxury to me! I would not exchange it for all the thrones in the world."—NAPOLEON FIRST.

CHAPTER XII

REMEDIES FOR SLEEPLESSNESS

"Fatigue is the best pillow."—FRANKLIN.

"Put off thy cares with thy clothes: so shall thy rest strengthen thy labor, and so shall thy labor sweeten thy rest."—QUARLES.

A REVIEW of the various causes, each and every one fully capable of producing insomnia, will readily establish the folly of claiming for any drug or combination of drugs, or any one method of treatment, an absolute cure of the disorder. There is no specific, for inasmuch as many factors operate in producing the condition there can be none. Moreover, if we bear in mind the fact that insomnia is not a disease, *per se*, but simply a manifestation of some perversion of the system, we can readily understand why it is necessary for the pathological condition to be removed before a cure can be expected.

The plan to be followed by anyone who has been a sufferer from insomnia for any length of time is for that one to consult some competent physician or physicians, and not to rest contented until every part of the body has been subjected to the most rigid examination. I say

competent because all physicians are not capable of treating the affection. The family doctor who effects more cures, probably, because of the faith there is in him, rather than the pills or potions he dispenses, is, in truth, comparable to a jack of all trades. I do not say this disparagingly, because I am an ordinary physician myself. The average practitioner knows something of all diseases; much of some, little of others. His limited time and the stress of life prevent him from acquiring all the knowledge he wishes to have concerning any one subject.

This is an age of specialists. There is so much of medicine and surgery that for a doctor to be a success it is necessary for him to devote his whole time to one branch of either science. Of course, it is well and proper that the family physician, or some ethical physician in whom you have confidence, be first consulted. But if he fails to remedy your state, he will not be averse to recommending you to some other physician who knows more, by dint of specialism, of the proper therapeutics of such disturbances than he does. Should you meet with failure, be not discouraged: there is a cause some place which must be found. Some may have forgotten to examine your eyes, take your blood pressure, examine the function of your stomach. But until

the very best specialists have pronounced themselves baffled, if sleeplessness has been keeping you company long, refuse soporific drugs, unless the reason for their employment satisfies your understanding.

The use of soporific drugs cannot be too strongly condemned. They may, of course, be valuable in acute illness, or when for adequate reasons, to be determined only by the physician, sleep is necessary for the preservation of the life of the patient, tiding him over a crisis. Practically all the drugs employed in the treatment of insomnia are poisons, and produce sleep artificially. They are also habit-forming, and tend to accumulate in the system, thereby deranging the bodily functions, especially the vital ones. Not only is the sleep they produce unnatural, but it fails to be productive of the feeling of well-being and satisfaction that distinguishes normal sleep. Drug users awake irritable, fatigued, mentally dull, "dopy"; again, their sleep is liable to be disturbed by unpleasant dreams, nightmare, and other disorders associated with unnatural sleep. Frequently used the dose of soporific drugs must be constantly increased, in order to obtain the desired effect; moreover, it is also necessary to change from one agent to another, inasmuch as the body becomes

accustomed to the drug used and is no longer influenced by it.

The most powerful of all the somnifacients is opium, particularly its derivative, morphine. When morphine is given hypodermatically it produces sleep very quickly. While it may be true that morphine is given hypodermatically more often than any other drug, we should not make the mistake of thinking that every time the doctor employs the hypodermic syringe he is injecting morphine. Many other drugs, such as strychnine, digitalin, ether, alcohol, pituitrin, etc., are administered in this way, particularly when prompt action is desired or where oral medication is impossible. Anyone who prescribes morphine for chronic insomnia should be looked on with suspicion. It is not scientific and is bound to prove detrimental in more ways than one to the patient. There is no other drug that possesses such a tendency toward creating an appetite for it nor is there a habit more difficult to control. The mental, moral, and physical degeneration it produces is almost beyond belief and understanding.

I can quite readily bring to mind the case of a woman of wealth and affluence reduced to an almshouse existence because a woman friend had once given her a morphine pill to relieve her

insomnia. In those days narcotic drugs were not difficult to procure, and stupidly reasoning that there was no necessity for going without sleep when one little pill would do so much, she began using the drug regularly. Her diamonds soon became the pawnbroker's, from a lady of leisure she became a wage slave, until at last she was numbered among the paupers. Fortunately for her, she was cured of the habit, and much to her pleasant surprise she still managed to sleep, the condition producing her insomnia having righted itself years before.

There are numerous other drugs used for insomnia, such as chloral, paraldehyde, veronal, trional, acetanolid, the bromides. They are all dangerous, habit-forming, and provocative of serious derangements which may terminate fatally. There is no drug yet known that will produce a perfectly normal sleep, nor is there any drug that can be used indefinitely, no matter what the ailment may be, that does not destroy more than it builds. Drugs add coals to the fire, and once the fire is fed it may not be quenched.

In general, the person afflicted by insomnia should lead a quiet life, free from excesses of any kind. We all require, on an average, eight hours of sleep during each twenty-four, and we should so regulate the day as to have a definite hour for

retiring and for arising. Once the habit of going to sleep at a certain hour becomes established it will be difficult to break. As Horace Mann says: "Habit is a cable; we weave a thread of it each day, and it becomes so strong we cannot break it."

Training in proper habits of sleep should be begun at birth. The infant should be put into its crib at a certain hour and while awake, and should be allowed to go to sleep of its own accord. Pacifiers, rocking to and fro, and other devices are prone to be habit-forming. Regular sleep is best obtained by wakening the infant every two hours during the day for feeding, and allowing it to sleep as much as it will at night. After the fifth month all feedings between 10 p.m. and 7 a.m. should be omitted. Feeding the infant every time it awakes, "floor-walking," rocking, will not aid in establishing good habits of sleep. A darkened, quiet room, a warm bed, a satisfied appetite, dry napkins, and unimpeded respiration, are all that are necessary to produce sleep in a normal, healthy child.

On awakening in the morning, the first thing you should do is to "thank God that you have something to do which must be done whether you like it or not. Being forced to work, and forced to do your best, will breed in you temper-

ance, self-control, diligence, strength of will, content, and a hundred virtues which the idle will never know" (Kingsley).

Remembering that sleep tends toward a stasis of blood in the various larger organs and in the extremities, we should, before arising, lie on the right side for a few minutes, then on the left, then on the stomach, and finally on the back. This simple practice is often very efficacious in removing the angina pains, asthma, lumbagoes, so often found in anemic individuals and which are often due to improper positions during sleep. The muscles should then be gently exercised by stretching, after the manner of a yawn, so as to remove the stiffness then existing in them occasioned by repose. It also serves to minimize the slight shock accompanying a sudden change to the upright position.

Since mucus, cell detritus, foreign matter from the pharynx and lungs, have collected in the mouth during the night, this portion of the body should receive adequate attention, as should the nose, the eyes, and the ears. If we made a careful record of the persons who were sanitary with these portions of their anatomy we would find their number surprisingly few. These matters are of course minor, but it is only by a careful attention to

apparently trivial conditions that a perfectly working body is acquired.

Every person should devote at least five or ten minutes each morning to exercise and deep breathing, preferably in the open air. If we lived like Methuselah there would not be much difficulty about the latter. Methuselah, be it remembered, always slept in the open air. When he had reached the record-breaking age of 500 years, it is said that an angel appeared before him saying, "Arise, Methuselah, and build thee a house, for thou shalt live 500 years longer." But Methuselah answered, "If I am to live but 500 years longer, it is not worth while to build me a house. I will sleep in the air, as I have used to do."

A short brisk walk before breakfast is one of the best appetizers known. Moreover, the exercise aids in stimulating peristalsis of the bowels, reestablishes the circulation of blood, massages the various organs, cleansing them of waste products, the removal of which has been sluggish during the night, charges the system with oxygen, and, in short, fills the body and soul with the joy of life.

Recalling to mind that the conditions favoring sleep are fatigue and mental quietness, the business transacted during the day should not be so

excessive as to produce overfatigue or mental excitation. When custom tolls the knell of the working day, leave all the day's problems behind you. Shop talk out of shop hours is not conducive toward making you popular, let alone sleep. If your work is grouped under the sedentary occupations, a smart walk of a mile or two after supper will produce a non-excessive amount of fatigue, while a quiet game of cards, checkers, or chess where nothing is at stake will often produce mental serenity. Attendance at plays that do not deal with exciting social or other problems may prove advantageous.

The evening meal should be simple and light, free from indigestible and heavy foods. The condiments, as mustard, vinegar, pepper, etc., had best be eschewed at this meal, likewise the stimulants, as tea, coffee, alcoholic drinks. Lettuce, onions, and apples are compatible to and often productive of sleep. By no means is the stomach to be overloaded.

Before considering any of the methods by which sleep may be gained, there are a few questions of practical importance deserving of attention. One of these is as to the advisability of two or more sleeping together.

While it is not always possible, for numerous reasons, for each individual to have a sleeping

room of his own, if it is to be had for the asking, he should by all means ask. If not feasible or possible, then it is by no means a hardship to procure an extra bed, so that there may be a bed for each occupant of the room. It goes without saying that no more than two persons should sleep in the same sleeping room at the same time. The habit some mothers have of taking their infant offsprings to bed with them is fraught with danger. The comparatively large number of infant deaths by suffocation should afford ample proof of this. No good will ever come from adults sleeping with the young, though it once was believed that healthful influences could be transmitted in such a way, as is proved by the fact that King David was given as a bedfellow a strong, vigorous youth, in the hope of restoring his waning faculties. But to no avail.

There are many reasons why only one person should occupy a bed. First of all is the fact that it prevents the contraction of disease. If the bed-mate be a victim of tuberculosis, for instance, because of the intimate contact the disease is very apt to make an appearance in the other also. Likewise with the other infectious diseases. Secondly, we are not all of the same temperament: one wants the windows widely opened, the other does not; for one there is too much bed

clothing, for the other not enough; one may be fidgety and nervous and so disturb the other's rest, etc.

Another practice that should be abandoned is sleeping in underwear, at least the same underwear that has been worn during the day and which from day to day becomes contaminated by sweat and other bodily excretions. Such a practice produces a sticky, uncomfortable sensation to the skin and may interfere with sound sleep. It is not a sanitary measure, by any means. Such clothes as are worn during the day should be exposed to the air during the night. A pair of pajamas or a nightdress is no longer a luxury, though many of us still think so.

Since sleep may be disturbed by a desire to evacuate the bowels or bladder and when once awakened difficulty may be experienced in again recovering it, as a precautionary measure it is well that these organs be given a chance to act before we retire. In this way we may outwit the enemy.

As previously stated, there is no specific for insomnia. The underlying cause of the condition must be ascertained and removed before a cure can be expected. But even then it sometimes happens that it is necessary to wean back

the ability to sleep, and for these cases and those for which no definite etiological factor can be found the following advice, garnered from the experiences of numerous insomniacs and specialists in the treatment of the disorder, may prove of value.

Many famous men have been afflicted with difficulty in either going to sleep or in sleeping for any length of time. The expedients they adopted were not only diverse, but often amusing. Thus, Sir John Remire combed the back of his head with a fine-tooth comb and rubbed gently with the palm of the hand; Sir John Sinclair counted, as did Andrew Jackson; Franklin took a cold air bath; Theodore Tilton went from one bed to another using six in all; Professor Agassiz rolled his eyeballs under his eyelids, as if looking at his feet, etc.

Many persons find grateful the partaking of a light meal before retiring. Food in the stomach causes a flow of blood to that organ, and consequently a diminished supply to the brain, thereby producing cerebral anemia, which, as we have learned, favors sleep. That there is no plausible reason why we should not eat before going to bed is well illustrated by the fact that animals are wont to sleep, and sleep soundly, after partaking of a heavy repast.

Moreover, observations on animals have proved that food taken before going to sleep is well assimilated, much better than if the animals are made to work, run, or even walk after feeding. We also note how readily infants fall asleep after taking nourishment, even sleeping at the breast if allowed to do so. It must be admitted, however, that we can do with less sleep if we go to bed with the stomach empty.

If eating before retiring is employed, and it is to be recommended because of its simplicity and comparative harmlessness, the evening meal should be light. Before going to bed a glass of hot milk, malted milk, beef tea, or simply hot water may prove sufficient. Many insomniacs find relief by drinking a pint of hot water before each meal and at bedtime. A few drops of peppermint or lemon juice will help to render the water more palatable. By no means are tea, coffee, alcohol, or condiments to be taken before bedtime. A glass of hot porter or whisky works well for a time in some cases, but its effect soon wears off. The possibility of an alcohol habit being developed should not be forgotten; again, there is nothing which will impair the digestive apparatus so readily as alcohol on an empty stomach.

Some authorities recommend the eating of

whatever appeals to the appetite, and of as much as is wanted. Night workers may suffer no inconvenience from following this practice, for the reason that this meal taken at their bed-time corresponds to the day worker's supper, so that their stomachs are not apt to be overloaded by means of a meal taken a short time before. A hearty supper and a generous eating before going to bed may defeat the purpose for which it was intended, or if sleep is procured such sleep is prone to be disturbed and unrefreshing.

If the appetite for food before retiring becomes gradually increased it may be satisfied without the fear of harm resulting. While the digestion of food is physiologically retarded during sleep in the eight hours given it the stomach can well overcome the impediment. It is wise, however, to lessen the amount of food taken during the day so as not to overwork the stomach.

Those who are troubled by awakening in the still hours of the night and who find it difficult to go to sleep again may find relief by eating a few crackers or drinking a glass of milk which should be kept by the bedside for just such an occasion. If a smoker, a pipeful of tobacco may prove equally efficacious.

Baths in the treatment of insomnia have been

used from time immemorial. Wisely employed they are agents of value. When not otherwise stated the following temperatures of the bath water are to be understood.

	Degrees Fahrenheit.
Cold	33 to 65
Cool	65 to 75
Temperate	75 to 85
Tepid	85 to 92
Warm	92 to 98
Hot	98 to 112
—TANNER.	

Cold tub baths are not to be advised, as a rule. The mental shock produced by them is apt to prove detrimental. The cold bath accelerates the pulse, lowers the temperature, and drives the blood to the internal organs. Persons troubled with disease of the heart or arteries may die suddenly because of the latter fact. Taken during the day, when not contra-indicated, the cold bath may prove invigorating, but as a general rule it does more harm than good.

The temperate bath is more serviceable. It may be taken by sitting or reclining in a bath-tub one-third full of water for five or ten minutes, the body being thoroughly rubbed with a Turkish towel afterward. The temperature of

the water may be lowered from day to day, until it approaches that of the cold bath. By going to bed immediately after the bath sleep is often produced rapidly, but if its efficacy does not quickly manifest itself it is not an indication that it is valueless. To mental workers this type of bath may prove a boon. The simple standing in cool water and rubbing the feet with a rough towel may suffice.

Much benefit is claimed for what is known as the neutral bath; that is, the bath water has a temperature of 98 degrees which is not allowed to fall below 93. It produces no stimulation, is restful and soothing to the nervous system, and may be used as a substitute for sleep. Should its effect wear off the temperature of the water may be lowered to that of the tepid bath or raised to that of the hot bath. The bath need not exceed ten minutes in duration, though more benefit is experienced if the individual remains in it as long as is convenient.

A hot bath is very useful in insomnia due to fatigue, exhaustion, worry, neurasthenia, disagreeable feelings in various parts of the body, nervousness, etc. It should be taken in a room the temperature of which is about 70 degrees. The head and face should first be doused with cold water; then the entire body, exclusive of

the head, is immersed. The temperature of the water first should be that of the body, 98 degrees, and then gradually be increased to 105 or 110 degrees. The duration of the bath need not exceed a few minutes, after which the body is dried quickly, and with the least possible exertion the person goes to bed.

Enveloping the body in moist sheets, these in turn being covered by warm, dry wraps, the individual lying in these until asleep, or all night if needs be, often brings results. When cold is well borne the "dripping sheet" may produce sleep. The person stands in hot water with a towel dripping ice water about his head. A linen sheet is then wrung from a basin of cold water and thrown over his back. Friction is then made through the sheet, after which the sheet is removed, the body dried, and the individual put to bed.

The foot bath, given by means of immersion of the feet in hot water, to which mustard may be added, sometimes produces sleep by causing cerebral anemia. The German peasants have used for over a hundred years a long, wet stocking on the leg, this being covered by a dry one.

A cold spray or shower, alternated with the hot, is of value. In the insomnia due to hot

weather or fever, sleep may be induced by a cold water bag to the neck.

Massage is of value, particularly in neurotic individuals and in those whose insomnia depends upon mental excitation and worry. Massage of the feet or head may be all that is necessary, the strokes used being light and smooth, and thus soothing. General bodily massage can only be practiced by someone versed in the masseur's art. The same is true of electricity; that is, it requires a skillful operator, and so is not within the reach of the average person. Moreover, while electricity occasionally does good, it excites as often as it soothes.

The reading of a book that is not apt to stir the imagination, and which while dry is nevertheless readable, is to many a potent soporific. There are books and books, so a judicious choice must be made. The reading of serial stories, stories of battle, adventure, warfare, mystery, problem stories, is not to be advised, because this tends to excite the brain and to keep the reader's imagination occupied after he has gone to bed. Books that cultivate the friendly spirit are to be encouraged, such as David Grayson's "The Friendly Road," Cicero on Friendship, Tennyson's "In Memoriam," Emerson on Friendship, Bunyan's "Pilgrim's Progress."

Or books that breed contentment, as Grayson's "Adventures in Contentment," Walton's "Why Worry," and "Peg Along," Cabot's "What Men Live By." "The Lives of the Saints," "The Life of Christ," "Little Dorrit," "Sartor Resartus," "A Poet at Grass," "Paradise Lost," often prove efficacious where others have failed. Plato, Amiel, Emerson, Lamb, Crabbe, Oliver Wendell Holmes, St. Francis of Assisi may help lure Morpheus. In extreme cases the reading of books unintelligible to the reader may produce drowsiness. In any case, the reading should be done by the bedside and the individual should be prepared to go to bed the moment his eyes become heavy. Otherwise the activity associated with going from one room to another and undressing may so stir the person as to reproduce wakefulness.

Sitting before an open fire, and contemplating the dull embers as they glow often wraps one in slumberland. Soft music, especially if played on an organ, may do the same. Rocking to and fro in an easy chair, under the rung of which a small piece of wood has been placed, is also of value. Or a hammock may be employed, motion being imparted to it by one of the family who reads some monotonous book, every other

word or line being skipped, if necessary, so as not to arouse interest.

Innumerable methods for procuring sleep have been recommended at one time or other. One for which much is claimed is for the sufferer, on going to bed, to assume a comfortable position, thus relaxing the skeletal system. Instead of frequently changing position, he is to maintain the position first assumed no matter how trying it may be. Every movement, such as yawning, sneezing, coughing, is suppressed. If such is done, at the expiration of fifteen or twenty minutes sleep ensues. With the success achieved it will become natural for the individual to follow the instructions given, which soon cease to be a hardship.

Another method that is very valuable consists in turning the eyeballs as far as possible under the closed lids. It should be done gently and without strain. While doing this breathe deeply but slowly, at the same time mentally counting the breaths taken. The procedure is to be repeated until sleep puts an end to its necessity. This method is a sort of self-hypnosis, is not liable to be detrimental save where ocular disease exists, and when the ability to sleep is won can be dispensed with.

Benjamin Franklin wooed "balmy nature's

sweet restorer" by a cold air bath. From a letter to M. Dubourg *On the Free Use of Air*:

"The shock of cold water has always appeared to me, generally speaking, as too violent, and I have found it much more agreeable to my constitution to bathe in another element. I mean cold air. With this view, I rise almost every morning, and sit in my chamber without any clothes whatever; half an hour or an hour, according to the season, either reading or writing. This practice is not in the least painful, but on the contrary agreeable; and if I return to bed afterward, before I dress myself, as sometimes happens, I make a supplement of my night's rest of one or two hours of the most pleasing sleep that can be imagined. I find no ill consequences whatever resulting from it, and that at least it does not injure my health, if it does not in fact contribute much to its preservation. I shall therefore call it, for the future, a *bracing* or *tonic* bath."

From his *Art of Procuring Pleasant Dreams*:

"When you are waked by this uneasiness, and find you cannot easily sleep again, get out of bed, beat up and turn your pillow, shake the bed clothes well, with at least twenty shakes, then throw the bed open and leave it to cool; in the meanwhile, continuing undrest, walk about your

chamber, till your skin has had time to discharge its load, which it will do sooner, as the air may be drier and colder. When you begin to feel the cold air unpleasant, then return to your bed; you will soon fall asleep, and your sleep will be sweet and pleasant. All the scenes presented to your fancy will be of the pleasing kind. I am often as agreeably entertained with them as by the scenery at an opera. If you happen to be too indolent to get out of bed, you may, instead of it, lift up the bed clothes with one arm and leg, so as to draw in a good deal of fresh air, and, letting them fall, force it out again. This repeated twenty times will so clear them of the perspirable matter they have imbibed, as to permit your sleeping well for some time afterward. But this latter method is not equal to the former.

“Those who do not love trouble and can afford to have two beds, will find great luxury, in rising when awake in a hot bed, and going into the cool one. Such shifting of beds would also be a great service to persons ill of a fever, as it refreshes, and frequently procures sleep. A very large bed, that will admit a removal, so distant from the first situation as to be cool and sweet, may, in a degree, answer the same end.”

The late Dr. J. B. Learned, who believed that

most insomnia results from automatic thinking, has the following advice to give. To the subject of insomnia Dr. Learned devoted much attention, stimulated probably because he himself suffered from the disorder by reason of an injury to his head. From *The Healthy Home*:

“Take in mind the breathing; reduce the number of inspirations and expirations one-half; make each one full, deep and prolonged. To do this the mind must give the matter attention. This attention is not exhausting, but it prevents the whirl of thought which has made sleep impossible. In a short time the subject gets sleepy and lapses into unconsciousness.

“Another experiment with the respiratory apparatus is to forbid all activity of the diaphragm; let the breathing be done by the upper chest muscles. The mind has to superintend this work. You are not to drop it consciously. If you get to sleep over it, that is just the object desired.

“If your automatic thinking persists in spite of this little set occupation, add another duty. Bend the hand, the foot, a finger or toe, along with the uniform breathing. You seek a balance of circulation in the chambers of gray matter. By this concentration of will power you are not only unconscious of the automatic thinking, but

you are soon under the influence of sleep. When sleep claims you, normal respiration gives you normal circulation and normal repair, and you waken a new man. You can use a score of methods to accomplish this.

“Take another example: Extend, if you please, the trunk and extremities. Reach the head board and the foot board at the same time, if you were made long enough. See how long you can maintain this enlargement of yourself physically with a new sensation pervading every muscle engaged. Does automatic thinking persist? No, you are soon conscious of only one condition, not wholly agreeable; it is the strained position in which you find yourself. The sensation arising from this unusual demand, made upon all the muscles engaged, is constantly before you. The belt has actually been thrown off that shaft, the revolution of which gave you the automatic connection that kept you from sleeping.

“Try this combination of contracting one muscle, a sudden brief jerk, at the beginning of each inspiration. Make any selection of muscle you please, but see that its work is done absolutely on time. Close attention is required. You are soon conscious of nothing else. In truth, it is but a little time before you cease to be conscious

of this, for normal sleep again puts in her claim.

“Still another: Touch the pulse with one finger: with each heart beat contract a muscle of another finger, or if one hand, arm, leg, or foot, any muscle, indeed, you please, but see that you keep time with the heartbeat. If this be too exacting, let your improvised muscular contraction alternate with the heartbeat, or skip two beats to simplify. In this effort to be exact you will be busy. Automatic thinking is wholly displaced and ere long your extemporized exercise is displaced also, for sleep is bound to arrest the whole procedure. Uninterrupted attention is demanded, however.

“So far the physical exercise has been so mild that very little outlay of muscular power has been called for. Perhaps in the large majority of cases this is entirely sufficient and the best mode of procedure. In another class, however, the subject, vigorous in brain and muscle, with no lesions of heart or apoplectic tendency, may, by himself in his bed lying upon either side and changing as he prefers, employ the same muscle he would in bicycle riding. He may start off moderately and increase here as he would on the wheel with a ten-mile ride before him, or he may take a little sprint. This motion calls for

more power and at once counteracts the automatic brain work which preceded. The muscle becomes well charged with arterial blood, the whole capillary system of the skin is suffused and perspiration follows. Ere long the sensation of fatigue follows also, and a cessation of motion, the recumbent position being assumed, is followed by sleep.

“A like object lesson, not as agreeable to follow perhaps, but requiring as much energy, is found in the raising of head, foot, hand and arm from their wonted resting places. Lying upon the back, the head is lifted, then the hands, with both arms extended, raising the covers sufficient to allow a free exchange between the inner and outer atmospheres. The lift of foot and leg will act as a pump also; let this be repeated two or three times at each engagement. The surface, thus lowered in temperature, will be restored to its normal degrees and this requires the new flow of arterial blood to the skin, and serves further to eliminate from that part of the brain which has been clandestinely engaged. Let this occur at regular intervals, if you please, by counts of respiration.

“There need be no fear of ‘catching cold’ from this exposure. Clothing sufficient to serve the purpose, without such pumping in of cold

air, will insure return of natural conditions and temperature.

"To turn off the belt the shaft which supplies power to that portion of the brain which causes the automatic disturbances at the sleeping hour, this was our task. The foregoing object lessons, or a multitude of others not described, will certainly secure the end. Persistence must be observed."

One more method for obtaining sleep and I am through with "method" treatments. It is that of Dr. De Witt Hyde. From *The Outlook*:

"Assume an easy position, with the hands resting over the abdomen. Take a long, slow, but easy and natural breath in such a way as gradually and gently to lift the hands outward by the action of the abdomen. At the same time slowly and gradually open the eyes, so that at the end of the inspiration they are wide open and directed upward.

"Let the breath out easily and naturally, letting the hands fall inward as the outward pressure of the abdomen is withdrawn. At the same time let the eyes drop and the eyelids naturally fall by their own weight, so that they are closed at the end of the expiration. Do all this quietly and naturally. Do not make hard work of it.

“ Repeat the inspiration and expiration with opening and lifting, dropping and closing of the eyes ten times. Then take ten breaths in the same way, allowing the eyes to remain closed. Alternate ten breaths with opening and closing of the eyes and ten breaths with closed eyes.

“ Nervous persons will have some difficulty at first in the gradual opening and closing of the eyes. They will tend to fly open and then snap together. But the gradual and easy opening and closing of the eyes in rhythm with quiet, natural breathing, when once secured is almost equivalent to dropping off to sleep.

“ When the eyelids begin to feel heavy, and you feel tired and sleepy, as you will very soon, go through the motions more and more easily and lazily, until you merely will the motions without making any effort, or hardly any effort, to execute them. At this stage, or, more likely, in one of the intervals of breathing without any motion of the eyes, you will fall asleep.

“ This rule gives the mind two gangs of workmen, two sets of muscles to watch and keep working in harmony. It cannot do this and take account of the work done and at the same time keep up much of a thinking about anything else.

“ It induces the respiration that is characteristic of normal sleep. It tires the set of muscles

the tiring of which is one of the favorite devices for producing hypnosis. It produces and calls attention to certain sensations in the eyelids which are the normal precursors of sleep. It alternates work in such a way as to make resumption of work more and more unwelcome and rest more and more grateful."

As a means of producing sleep, if indeed for any other purpose, hypnotism is never to be used. The sleep it gives is artificial, therefore unnatural and morbid, and is not apt to be followed by the feeling of restfulness and satisfaction which characterizes natural sleep. Its frequent use is harmful to anyone, whether sick or well, inasmuch as it tends to render the subject mentally weak, imaginative, and neurotic. There is no doubt that it is occasionally of service in dispelling fixed ideas, and in the treatment of some nervous disorders, but the remedy may prove worse than the original disease. When we consider the fact that many hypnotists are lay people, some of whom possess no scruples, it is not hard to realize that they may use their power for their own advantage, rather than that of the patient.

Many cases of insomnia, especially those due to fatigue or nervous exhaustion, hay fever, etc., are often cured by a change of scene. Week-

ends in the country may suffice; or if feasible, residence in a climate which is equable, and so permits the individual to spend the major part of his time in the open air, is to be considered. The Bahama Islands, the Sandwich Islands, Ecuador, the West Indies, Bermuda, Florida, Italy, or Southern California meet the above condition. A sea voyage, or a stay at the White Mountains or the Adirondacks, is also of service.

It must be remembered that when insomnia results from psychic disturbances no baths, methods, or other treatment are apt to prove of much value until the mind becomes tranquil. As Swift says: "The best doctors are Dr. Diet, Dr. Quiet, and Dr. Merryman." We must convince ourselves that we will be able to sleep. The constant repetition of "I will sleep" works wonders.

Instead of thinking of the joys that have passed you by, think of those you have the good fortune to possess. Smile, even if it hurts. Be a friend to all, for, as Cicero says: "There is no such thing as happiness, health, progress, without friendship." Put yourself in the other man's place, as John Bunyan did when he looked out the window of Bedford Jail and saw a man being taken to Tyburn tree to be hanged.

Bunyan, turning to a fellow prisoner, said, "But for the grace of God, there goes John Bunyan." Sympathy is the open sesame to all hearts; it breeds the cheerful spirit.

When your head strikes the pillow at night revert to your boyhood days. Think of the days that formed the happiest parts of your life; think of your successes and forget the failures, think of joy, joy, and nothing but joy. Chase out the glooms that for years have been cobwebbing your cerebral spheres. You may not eradicate them all with the first volley; they are not easily vanquished. When they countercharge do not retreat. Fire another bombshell into their camp. Take no prisoners, have no mercy, grant no truces, and you'll find that, just as the burned child dreads the fire, they'll leave you in peace, otherwise in pieces.

Should sleep fail to come, no matter how you have striven to win it, there's no cause for worry. Insanity will never result from a few sleepless nights, neither will the health be seriously impaired. If you cannot sleep, rest, the mind most of all. Do not delude yourself into the belief that you never sleep. Those who never sleep die quickly; it may be a week, ten days at the most. The few hours of sleep that you do procure, and which you are so prone to

forget, may suffice your individual needs, mental or physical.

Herbert Spencer says in his *Autobiography*:*
“Appearances gave the impression that I was in fair health. Appetite and digestion were both good, and my bodily strength, seemingly not less than it had been, as tested by walking, was equal to that of most men who lead town lives. This continued to be my state for many years.

Both then and afterwards my sleeping remained quite abnormal. A night of sound sleep was, and has ever continued to be, unknown to me: my best nights being such as would commonly be called bad ones. Save when leading a rural life with nothing but outdoor sports to occupy attention, I probably averaged between four and five hours of unconsciousness. But it was never continuous. The four or five hours were made up of bits; and if any one of the bits was two hours long, it was something unusual. Ordinarily my night had from a dozen to a score wakings. Moreover, at that time and for five and twenty years after, the sensation of drowsiness was never experienced.”

If such were the lot of such a genius as Spencer, ours cannot be much worse. Let his achievements solace the insomniac; good work

* (*Vol. I, pp. 579-80; D. Appleton & Co.*)

and insomnia are compatible. Most of us, if we slept in bits, as Spencer did, would proclaim to the physician that we didn't sleep at all, a common exaggeration, and one of which he is well aware. Particular attention should be paid to the passage, "My best nights being such as would commonly be called bad ones *save when leading a rural life with nothing but outdoor sports to occupy attention.*"

A natural, orderly life, sane eating, moderate exercise, an abundance of fresh air and sunshine, cessation of worry, moderation in all things—these are the rules of life. When we do not transgress the laws of nature, the gifts we most desire she lavishes upon us. If it be the gift of Morpheus that we seek, it will not be long in coming. And when it visits us, and stays with us, well will we have cause for thankfulness, and to say with Sancho Panza, "Now, blessings light on him that first invented sleep!"

"Close now thine eyes, and rest secure;
 Thy soul is safe enough, thy body sure;
 He that loves thee, He that keeps
 And guards thee, never slumbers, never sleeps.
 The smiling conscience in a sleeping breast
 Has only peace, has only rest:
 The music and the mirth of kings
 Are all but very discords when she sings;
 Then close thine eyes and rest secure;
 No sleep so sweet as thine, no rest so sure."

—QUARLES.

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